garden cuttings

a monthly newsletter for the discerning gardener

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Drought - Fire - and finally Flood

If anyone had doubts about Australia being a hard country these will almost certainly have been dispelled during the past few months.

First, the most severe drought in living memory, then - in two States - bush fires of horrendous ferocity resulting in incalculable loss, and finally - in South Australia, floods.

We are not, of course, alone in being subject to natural disasters. Perhaps we should count ourselves lucky that we do not have serious earthquakes or volcanic activity.

But do we learn from these disasters? There have, in the past, been many droughts, fires and floods, so collectively we have a fair amount of experience in dealing with them. But has this collective experience been adequately documented for the benefit of those to whom the next disaster will fall? Human memories are notoriously short, and if we don't write down our experiences much is lost.

For example, what individual experiences of the drought have been recorded? Which plants survived, which succumbed, and which, after the drought, apparantly moribund, will regenerate? These sort of experiences, if properly documented, may result in at least a partial re-writing of the text-books. And what new 'tricks' were learned in saving water, or recycling waste from laundry tubs and showers? Maybe several new ones learned last time will be useful next time - for unfortunately, there will be a next time.

And what of fire? How much have we really learned about living with the threat of bush fires and dealing with them when they come? There have been angry protests in some stricken areas against conservationist policies which, it is claimed, prevented fire breaks being made where they should have been made. A correspondent in the Adelaide hills, whose home was a hundred metres from the path of the fire when, mercifully, the wind changed, writes "From our garden we could see the large pines and the stringybark gums spontaneously igniting as the fire-ball raced through the tree tops. At least the broad-leaved deciduous trees scorched and burned more slowly, and in areas aside from the main path of the fire they did not burn at all (though still scorched) and shielded many homes from the flames".

Another report, in almost identical terms, comes from Macedon. These reports must go on permanent record, for there are obvious lessons to be learned, lessons which must be learned if, in years to come, another disaster of equal magnitude is not to strike.

So far as fire is concerned, the responsibility for documenting and examining all available evidence would appear to be that of State or Local Government. On the lessons learned from the drought, Departments of Agriculture will obviously be concerned, but perhaps in relation to garden plants and the use of restricted water supplies in gardens during severe droughts, the Australian Institute of Horticulture may see this as an appropriate subject for their attention? If factual records were obtained and preserved they would add greatly to our total sum of knowledge.

TIM NORTH

PLEASE PASS IT ON . . .

If you have enjoyed reading this issue of 'Garden Cuttings' will you help us find more subscribers by passing it on to a friend who may be interested? Or write the name and address on the coupon on page 103, post it to us, and we will send them a **FREE INTRODUCTORY COPY.**

Contents

Drought - Fire - and finally Flood .... page 77
Book Review .... page 78
English Gardens No. 10 .... page 79
A Crinkle Crankle Wall .... page 79
Aust. Geranium Society Seminar .... page 80
An International Garden Festival .... page 81
Another change &
The Australian Garden History Soc. ...... page 81
The Leyland Cypress .... page 82
Plants Wanted .... page 82
Autumn Colour .... page 83
Trees and Shrubs for Autumn Colour ..... page 83
Roses for Autumn Colour .... page 84
The Education of a Gardener .... page 86
Ivy Geraniums .... page 87
Gardening in the Alice Springs Region .... page 88
A new method of raising cuttings .... page 88
Box 'Balls' .... page 88
Hidden Hardiness .... page 88
Gardening in Western Queensland .... page 89
News Briefs .... page 91
A Banksia Festival in Melbourne .... page 92
Houseleek .... page 93
Herbs - some simple remedies .... page 93
Somerset Cottage .... page 95
Herb or Erb? .... page 95
How to make a fragrant &
lasting Pot Pourri .... page 95
Aloe Vera and other Aloes .... page 96
Woodside Herbs .... page 96
Plant Craft Cottage - Melbourne .... page 97
Vita Sackville West 'The Garden' .... page 97
Encouraging basal breaks in Roses .... page 97
Plant Variety Rights .... page 98
Italian terra-cotta pots & imported tiles .... page 99
Replant disease .... page 100
The Royal Water Lily .... page 101
Bagasse .... page 101
New Flowers & Vegetables
from the U.S.A. .... page 101
Cane - A natural addition .... page 101
Garden Market Place .... page 102
A recycling scheme for
Tasmanian Municipal Councils .... page 102
Breed a new flower and win $20,000 ..... page 103

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Book Review

In a Gloucestershire Garden

by Canon Ellacombe

Century Publishing Co. Ltd. London:
Recommended retail price:-
hardback $19.95, paperback $12.95

'In a Gloucestershire Garden' was first published in 1895; it consists of articles, some of them slightly altered, which were written for the 'Guardian' between 1890 and 1893. This is a very welcome re-edition, with an introduction by Rosemary Verey.

Canon Ellacombe created a beautiful garden, of about one and a half acres, at the Vicarage in the village of Bitton, near Bristol; his father had been Vicar before him and between them they administered to the needs of this parish for a total of ninety-nine years. He died in 1916 at the age of ninety-four, but unfortunately little remains of the garden he so lovingly cared for.

The first part of the book consists of month by month accounts of the plants he grows, their history, their virtues, and his observations on how they grow. The second part consists of more general essays on, for example, spring flowers, roses, and 'garden associations'.

The appeal of this book comes from the Canon's immense scholarship - he knows the history of every plant in his garden and often quotes from the classics in describing one - combined with his minutely careful observation (a skill which many of us who call ourselves keen gardeners would do well to develop). "It is not my object", he says, "to give rules for gardening; I wish rather to record the work done in the month". But he does far more than merely record the work. He describes the 'curious event' which follows the fertilization of the blossom of the filbert nut, how the tendrils of *Cobaea scandens* contract into a double corkscrew once their attachment to an object is complete. He tells us that "the grand old rose Souvenir de la Malmaison is never so beautiful in summer as in autumn, so it is quite worth while to sacrifice the summer flowers and let it bloom in autumn only". In watching plants emerge from the ground in spring he remarks that "few note that every separate plant has its particular method of coming out of the darkness into the light". It is observation like this that marks the true plantsman. Oenotheras and funkias (hostas) he found 'rejoice in the drought', and the Japanese Orange, *Citrus trifoliata,* flowered in his garden in April when it was not in the least damaged by a late frost, even producing 'little oranges, which however are of no value'.

"The more I study flowers", he writes, "the more I feel how little I know about them". But no one who reads this book will fail to learn a good deal from it; one becomes acquainted with many hitherto unfamiliar plants, many strange botanical facts, and there is a feast of quotations from the gardening classics to be enjoyed. In fact this book itself is a gardening classic.

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English Gardens No. 10

Hidcote Manor

Lawrence Johnston was born in Paris of American parents in 1871, and became a naturalized British subject in 1900.

In 1907 his mother, who had become Mrs Winthorp, bought for him 280 acres of farmland in the Cotswolds, together with a tiny hamlet of thatched cottages and a stone farmhouse. A wing was built onto the house, the cottages were restored, and then Johnston turned his attention to making a garden.

The site was not promising. It was exposed and windy, the soil was heavy and there were no trees except for two clumps of beeches and a single, but rather fine, Cedar of Lebanon. But Johnston went on to create one of the greatest gardens of the modern world, a garden entirely his own, yet with identifiable links with earlier traditions.

The conception is that of a number of small gardens within a large garden. In each there is a profusion of planting; Johnston liked to cram as much of what he wanted into each bed so as to exclude what he didn't want, namely weeds. Vita Sackville West has summed it up by calling it a "kind of haphazard luxuriance which, of course, comes neither by hap nor by hazard". It is a kind of cottage garden profusion, plants tumbling over themselves and seeding where they will - but you must look closely to discover Johnston's genius - and that is not too strong a word.

The whole design has strong architectural lines; long formal vistas invite one to explore further. The Jekyll/Lutyens influence is discernible, and though there is a typically Jekyllian richness to the planting this is far from a typical Jekyll garden. The planting is so exuberant that the hard lines all but disappear; but look carefully and you will see how each separate area has a collection of plants for a given purpose. Take particular note of the hedges which are used to divide the enclosures; no ordinary hedges these, for there is an extraordinarily subtle combination of greens and textures in them; one consists of no fewer than five different plants - Yew, Box, Holly, Beech and Hornbeam.

The genius of Hidcote lies in the combination of simplicity with sophistication. Perhaps no one has achieved this to the degree that Lawrence Johnston did.

Disliking the English winter, Johnston made another garden, at Mentone in the south of France. As he grew older he spent more and more time there, and eventually, in 1948, he gave Hidcote to the National Trust, the first garden they were to acquire. Much of the planting, of course, is comparatively recent, but it has been carried out meticulously, and Hidcote today faithfully represents the garden that Lawrence Johnston made.

* * *

A Crinkle Crankle Wall

"Crinkle crankle" walls were a feature of large country properties in parts of Suffolk, England, in the last century. The theory was that the wavy pattern of the wall made it self-supporting, thus buttressing was not necessary.

The one illustrated is at Eye, Suffolk, and borders the home of Sir Frederick Ashton, of ballet fame.

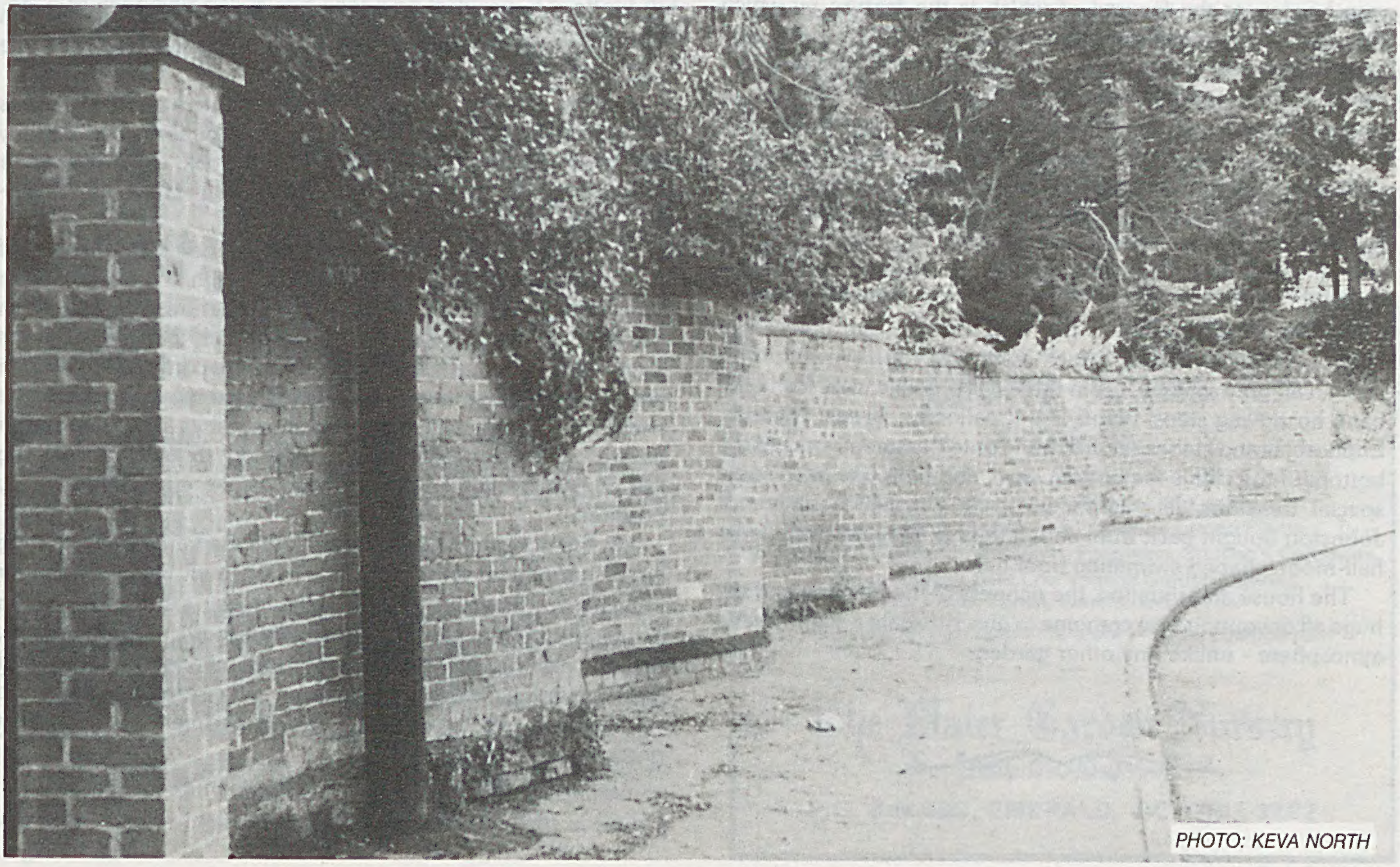

PHOTO: KEVA NORTH

English Gardens (continued)

Kiftsgate Court

Mrs Heather Muir of Kiftsgate and Major Lawrence Johnston of Hidcote - only a quarter of a mile further up the lane - were close friends. Although Johnston undoubtedly helped Mrs Muir in the initial planning of her garden and gave her many plants from his collecting expeditions, the two gardens are totally dissimilar.

Kiftsgate Court was built in 1890; Mr and Mrs Muir bought it in 1918. It sits on the edge of the Cotswold escarpment where it drops into the Vale of Evesham; the view is staggering. The house itself is a strange mixture of Victorian and Grecian styles, but its walls are now heavily camouflaged with climbing plants, notably *Magnolia delavayi* and a huge *Rosa mutabilis*.

The garden dates from about 1920. Much of the east side was terraced to accommodate borders of old shrub roses and other shrubs in toning shades of pink and purple, and the enormous task of tackling the precipice, known at Kiftsgate as "the bank" was started.

By 1955, with her labour force reduced from five to two, Mrs Muir felt the garden had become too much for her, so she handed it over to her daughter, Mrs Diana Binney, who replanted and altered various sections, and introduced new material.

The predominant colour schemes throughout the garden are still the same - pinks with a good deal of blue in them, pink-mauves, plums and purples, with a lot of grey and glaucous foliage.

The White Garden, on the far side of the house, now has a stone pool and a fountain in its centre, the fountain having been carved to order in the Pyrenees. Beyond the White Garden is the rose border, at the far end of which is the feature by which Kiftsgate is best known - the massive *Rosa filipes* "Kiftsgate", said to be the largest climbing rose in the world. Mrs Muir obtained it from E.A. Bunyard in 1938; after Mr Bunyard died no one could remember whether it was a chance seedling or a deliberate cross, but Graham Thomas recognized it as a form of *R. filipes,* and suggested that it be named after the house. By 1975 it was 90 feet wide and 50 feet high, and still growing! It has produced a half-child which has seeded over a bank; this has bronze-red young foliage and white flowers, and has been named "Diana Binney".

Behind these gardens is the Wild Border, and below that again the Yellow Border, which continues round to the north with an all-grey scheme. From there it is possible to descend the bank by zig-zag steps; plants like Escallonias, Cistus, Olearias, Euphorbias and Hebes seem to hang onto the steep bank. At the bottom of the cliff is the bottom lawn, and here one finds some special treasures, like some tree paeonies which Lawrence Johnston bought back from Japan. Mrs Binney has installed a half-moon shaped swimming pool here.

The house, the situation, the richness of the planting and the huge all devouring rose combine to give Kiftsgate a slightly eerie atmosphere - unlike any other garden.

* * *

Australian Geranium Society Seminar

The Australian Geranium Society will hold a Seminar at Macquarie University, North Ryde, N.S.W. from the 5th to the 10th September 1983.

The Seminar will include the presentation of papers, workshop sessions, and poster and other displays. On Thursday 8th September there will be a coach tour to specialist nurseries, and Friday 9th and Saturday 10th September will be devoted to the Society's Annual Spring Show, to be held at St. Andrew's Church Hall, Roseville, N.S.W.

The basic fee is $25 per person, or $15 per day for those unable to attend the whole Seminar. Single room accommodation is available at the University at a cost of $24 per day.

All enquires should be addressed to:

Miss B. Hudson,
Chairman, Seminar Committee,
Australian Geranium Society,
15/257 Pacific Highway,
Lindfield, N.S.W. 2070.

* * *

An International Garden Festival

A garden exhibition of a type never before held in the United Kingdom will be held on the banks of the River Mersey, just outside Liverpool, from April to October 1984. It is intended that this will be the first of a series of such exhibitions, the second having already been scheduled for the city of Stoke-on-Trent in 1986. It is also intended that the exhibition sites shall become permanent assets.

The site chosen for the 1984 exhibition has been described as a "disgusting combination of all the worst qualities of inner city urban dereliction, a smelly sludge-filled dock, the twisted wire and smashed concrete remnants of oil storage tanks, a methane-breathing urban rubbish tip ..."

But already the site has been totally remodelled. It consists of a permanent park on the river side, with a paved marine esplanade, kiosks and a restaurant; in the centre is the exhibition hall and an arena, which will subsequently become a sports arena; at the southern side is the landscape competition area, in which are lakes demonstrating various uses of water. A hill at the south-east corner will have special exhibits concerned with nature in the city and alternative technology. Framework planting will consist of massed shrubs, with semi-mature trees in key positions.

On the northern side of the site only the framework planting will be permanent since the area will ultimately be developed for industry and housing. For the exhibition it will be devoted to exhibition theme gardens - including horticultural displays, mazes, historic reconstructions, international gardens and gardens for the disabled, and a home and garden display. There will also be floral displays by Parks Departments from various parts of the country.

The whole site is a little under 50 hectares (225 acres).

Another change - and the Australian Garden History Society

A Change of Name

Our next issue, to be published early in June, brings another change to 'Garden Cuttings', for that month we absorb the Journal of the Australian Garden History Society, and become the official publication of that Society.

From its inception in October 1981 'Garden Cuttings' has grown from a small monthly newsletter of eight pages to a major publication for all those with a serious interest in gardens and gardening. It seems an appropriate time, therefore, for a change of name. 'Garden Cuttings', with its 'double entendre' of cuttings in the horticultural sense and cuttings in the newspaper sense, seemed an apt one at the beginning, but is not so apt now. The new name must, perforce, remain undisclosed for the moment, but we can say that it will be more in keeping with the position that this magazine now occupies in the world of horticulture and its allied arts.

What it will be about . . .

To most members of the Australian Garden History Society we will be no stranger, but to those among our subscribers, who do not belong to that Society, who may be wondering where this connection will be taking us, some explanation is due.

Firstly, let us make it clear that the new magazine, for the moment without a name, remains under independant ownership and editorial control.

Secondly, history is - or should be - a dynamic and not a 'dead' subject. So garden history is not a 'dry as dust' study of old gardens, old books and catalogues, of people and plants long since passed away. It is about the continuing process of adaptation of the principles of design, cultivation and maintenance to changing needs and changing fashions; it is about the origin and the gradual improvement of our garden plants; and it is about conservation, for if we destroy the past how are we to learn from it?

The new magazine will not, of course, be about garden history and nothing else. In fact little will change except that we will have the benefit of a wider circle of contributors and a wider range of material. There will still be articles on new - or forgotten - plants, both exotics and natives, on new methods of cultivation and propagation, still the short features on small and interesting nurseries where you can find rare or unusual plants, still the 'cuttings' from overseas horticultural journals. It will, in fact, still be 'Garden Cuttings' but with a good deal more added.

The Australian Garden History Society

And now, for the benefit of those of our subscribers who do not already belong, some information about the Australian Garden History Society.

The Society was formed as a result of a Conference held in Melbourne in March 1980. This Conference, which was attended by more than a hundred people from all over Australia, in turn arose from the enthusiasm of a group of researchers, operating separately in each State, who had been charged by the Australian Heritage Commission (except in Victoria, where the State Government was the motive force) to survey and catalogue surviving historic gardens in each State. These researchers had found so much of common interest that a national conference, with the notion of forming a Garden History Society, seemed a logical step.

The Society was, in fact formed at that Conference. Its first Chairwoman (now its Patron) was Dame Elisabeth Murdoch D.B.E., and an Executive Committee of fifteen members, representative of every State, was formed to manage the Society's affairs.

A Constitution was later adopted which defined the Society's objectives. Briefly, these are: to promote interest in and research into historic gardens as a major component of the National Estate; to encourage the preservation of historic and significant gardens and to promote proper standards in restoration, maintenance and design; and to foster the preservation and propagation of plant varieties used in nineteenth century gardens.

This should not, however, be taken to mean that the Society's sole interest is in old gardens. To quote one of the speakers at that inaugural Conference, Mr David Yencken (who at the time was Chairman of the Australian Heritage Commission) - "We can draw on many fertile and fruitful traditions to develop other kinds of contemporary landscaping ideas in Australia to-day". As in all fields of human endeavour a study of the past is the surest foundation on which to build a secure future.

So garden history, in this wider context, is a valid subject for study by all who have a serious interest in gardens and gardening. But it is also a subject for vital concern - for our heritage of gardens and garden plants is a fragile one. Just how fragile was brought home with brutal force on the 16th and 17th February last, when some of the finest and most historic gardens in the country were, in the space of little more than one hour, reduced to heaps of smouldering ash. To restore those gardens to anything like their former condition will involve huge resources in terms of skill, knowledge and dedication - plus vast quantities of plant material and, of course, money.

Elsewhere, and on a less publicised level, fine gardens are being threatened - by subdivisions or unsympathetic development on the part of new owners, by industrial development and its concomitant atmospheric pollution, by new express-ways an by-pass roads - and by sheer lack of funds on the part of their struggling owners. For to maintain a large garden to-day, that was once looked after by four, five or more full-time gardeners, and without any sort of tax concession, is not an enviable task.

In short, the Society can be said to have (a) an activist role, in helping to preserve historic gardens (b) a research role, and (c) an educational role.

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Australian Garden History Society (continued)

And what does it do?

The activities of the Society can be grouped in the following categories:

1. The publication of a Journal - six times a year, and from June onwards this one, in a slightly modified form and under a new name.
2. The holding of an Annual Conference (see note below).
3. Garden visits, lectures and discussions, on a State basis (details of current programmes will be published in our next issue).
4. Advisory Panels: these are being established at the present time - there will, for example, be a Plant Resources Panel, a Restoration/Conservation Panel, and a Legal and Financial Panel, with the basic responsibility of conducting research into, and giving advice on, their respective fields of interest.

In addition, other publications will appear from time to time. One, 'Guidelines for the Conservation of Historic Gardens in Australia' is almost complete.

Annual Conference 1983

Two Annual Conferences have been held so far, one in the Blue Mountains of New South Wales in 1981 and one in Tasmania in 1982.

The third Annual Conference will be held in Adelaide on the 4th, 5th and 6th November this year. The programme will include a guided tour of the Botanic Garden of Adelaide and visits to some of the best preserved historic gardens in the Adelaide Hills, talks and discussion periods.

The guest speaker on this occasion will be Professor W.T. Stearn, one of the most eminent botanists alive to-day, who has accepted the Society's invitation to come to Australia. Professor Stearn was, until his retirement in 1976, Principal Scientific Officer of the Department of Botany, British Museum (Natural History) and is the author or co-author of many books, including the following:

Lilies of the World (with H.B.D. Woodcock) 1950
Botanical Latin 1966
Gardening Dictionary of Plant Names (with A.W. Smith) 1972
Captain Cook's Florilegium (with W. Blunt) 1973
Australian Flower Paintings of Ferdinand Bauer (with W. Blunt) 1976.

He is also President of the Linnaean Society and Founder President of the Garden History Society of England.

Full details of the Annual Conference programme, and details regarding reservations, will be published in our next issue.

Subscriptions

The annual subscription to the Australian Garden History Society (which includes six journals per year) is as follows:

Corporate membership - $25.00
Family membership - $20.00
Ordinary membership - $15.00

This means that subscribers to 'Garden Cuttings' can have the additional benefits which membership of the Society brings for an additional outlay of only $3 for an ordinary membership, or $8 for the whole family.

However, all subscriptions to the Society fall due on 1st July each year; whereas subscriptions to 'Garden Cuttings' date from the month in which they were taken out. So that no one pays more than once for their Journal, refunds will be given on any unexpired part of a 'Garden Cuttings' subscription to those who renew their membership of the Society, or who take out a new membership,, on or after 1st July this year. Details of how these refunds will be applied will also be published in the next issue.

In the meantime all membership enquiries should be sent to:

Secretary,
Australian Garden History Society,
P.O. Box 279,
Edgecliff, N.S.W. 2027,
Australia.

The Leyland Cypress

The Leyland Cypress *(x Cupressocyparis leylandii)* is a natural bigeneric hybrid between the Nootka or Alaska Cypress *(Chamaecyparis nootkatensis)* and the Monterey Cypress *(Cupressus macrocarpa)*.

The cross originated in Great Britain, where the Leyland Cypress has been widely planted both for timber production and as a fast-growing hedge or screen plant. It combines the dense columnar habit and strong leading shoots of the Monterey Cypress with the flattened, slightly drooping sprays of a chamaecyparis, but is much faster growing than either of its parents - in fact it is said to be the fastest growing of all Northern hemisphere evergreens, and one of the four or five fastest growing evergreen trees in the world. Growth rates of at least one metre per year under favourable conditions are quite normal. It remains clad with foliage right to the ground even in old age (which *C.macrocarpa* does not) and stands quite hard pruning and shaping, making it suitable for formal hedges.

It is tolerant of coastal winds, and even poor soils, and seems to thrive best in cool maritime districts. As a specimen tree it has reached a height of 30 metres in Great Britain, but has been grown in New Zealand as a hedge plant for a number of years. Stanley J. Palmer, in "Palmer's Manual of Trees, Shrubs and Climbers" recommends planting 1.5 metres apart, and stopping when 2.5 metres to 3 metres high, in order to form a thick, bushy hedge.

There are at least five different cultivars, including the attractive golden-foliage one called "Castlewellan Gold", which does not reach such a great height, and so is more suitable for small gardens as a specimen tree than the type.

The Leyland Cypress has not so far been widely planted in Australia, but would appear to have considerable potential. Both the type plant and "Castlewellan Gold" are now available from Gaibors Nursery, Great Western Highway, Wentworth Falls, N.S.W.

Plants wanted

Mrs Dorothea M. Wallis, of RMB 401 Miriam, Victoria, 3415, is seeking bulbs of Blue Lachenalia, *Tulbaghia fragrans* and *T. album*.

Will anyone who is able to assist please get in touch with Mrs Wallis direct.

Autumn Colour

What is it that causes certain trees and shrubs, in certain areas and under certain conditions, to produce a brilliant climax of coloured foliage before they finally shed their leaves in preparation for winter? Why is it that in some years they seem to colour better than in other years? Why is it that any one species will colour much better in a cool climate than it will on the coast?

The mechanism that causes foliage to assume shades of yellow, gold, orange, scarlet and crimson is a complex one and varies slightly from one species to another.

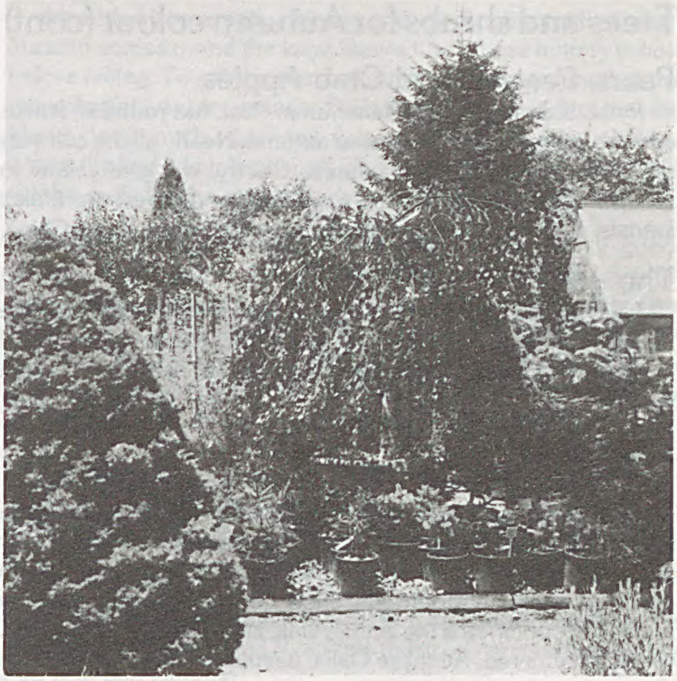
Generally speaking what happens is that, as autumn approaches, an abscission layer, or layer of corky material, gradually forms across the point where the leaf stem is attached to the twig; this cuts off the supply of cell sap to the leaf, so the manufacture of chlorophyll, which is no longer needed, ceases in that leaf. But the chlorophyll has, all through the growing season, masked the presence of other pigments in the leaf, so as chlorophyll diminishes these other pigments become more prominent. These pigments fall into two types, the plastids (of which chlorophyll itself is one) and the sap-soluble pigments. The plastid pigments include xanthophyll, which gives a yellow colouring, and carotene which gives orange (carrot colour). The sap-soluble pigments are normally made only during autumn, from excess sugars, and the most important one is anthocyanin; in an acid sap solution anthocyanin gives red to crimson colouring, while in an alkaline solution the colour will tend towards plum or purple.The extent to which these various pigments are present in the leaf determines the colour that it will assume.

The anthocyanins in particular are normally translocated through the plant at night, and stored in roots or trunk. Low night time temperatures prevent, or slow down, this translocation, so that more pigment remains in the leaf. This is why autumn colour is more brilliant in areas where the nights are cold than in warmer coastal areas. Daytime temperatures don't affect the process, but of course bright sunny days will show the colour of the leaves to much greater effect than will dull cloudy ones. So the ideal conditions for autumn colour are bright sunny days and cold nights.

Everything else being equal, it may be said that the colder the climate the better the autumn colour will be, but there is a "cut-off" point - for very cold, mountainous areas do not support the kind of broad-leaved deciduous tree that is the main source of autumn colour. Very dry inland areas, too, will not support autumn colour, and nor will extremely alkaline soils.

It follows, therefore, that for maximum effect trees that are noted for autumn effect must be carefully sited, both in relation to the general background and in relation to other trees or shrubs that have been planted for the same effect. Some quite beautiful autumn colour schemes can be achieved by the careful siting of trees and shrubs that will give differing autumn tones - from yellow through gold, orange, scarlet, then to deepest crimson and purple. One of the most successful autumn groupings can be seen in the garden at "Nooroo", at Mount Wilson in New South Wales.

Climate, soil and aspect, however, are not the only considerations. The selection of suitable cultivars, and of improved clones of a particular cultivar, is just as important, and here one must either have specialised knowledge, or else rely on the advice of a nurseryman who specialises in autumn foliage trees.



Gaibor's Nursery, Wentworth Falls, N.S.W. have a fine range of autumn colour trees and shrubs, especially maples.

Trees and Shrubs for Autumn Colour

The Maples

Japanese Maples *(Acer palmatum)* all have small, fine-stalked leaves with five or more points, and are a major feature of the autumn scene in cool climates; They are not, however, generally satisfactory in coastal areas, where they will fail to colour properly and are liable to be scorched by hot winds. There are innumerable cultivars, most of them smaller that the type, which grows to about five metres. Some of the best for autumn colour are:

'Osakasuki' - reddish at first, then brilliant orange and red
'Tsumigaki' - yellow with a purple-red margin
'Dissectum Ever Red' - brilliant red
'Dissectum Viridis' - yellow to orange

Acer japonicum also comes from Japan, and has eleven-pointed leaves. Some good cultivars are 'Vitifolium' and 'Filicifolium'.

Other Maples worth a place are: *Acer cappadocicum,* from Western Asia (pure yellow), *A.platanoides,* the Norway Maple (gold), *A.campestre,* the Englis Maple (yellow), *A.pentaphyllum,* a rather uncommon species, *A.ginnala,* a small Maple from China and Japan with exceptionally good autumn colouring, including yellow, orange and red; then there is *A.burgericanum,* the Trident Maple, also from China and Japan, which turns brilliant red, and *A.tartaricum* 'Rubrum' red.

The Rowans

The best of the Rowans, or Mountain Ash, for autumn colour are *Sorbus alnifolia* and *S.commixta,* from Japan and Korea, which give orange and red tints, and *S. americana,* the American Mountain Ash, with rather similar colours.

Trees and shrubs for Autumn colour (cont)

Pears, Peaches and Crab Apples

Pyrus ussuriensis, the Manchurian Pear, has roundish leaves on long stalks, turning bronze in autumn. Nearly all the cultivars of *Prunus serrulata,* the Japanese Cherry, will give yellow to reddish-orange tones. Of the Crab Apples the best are *Malus ioensis,* from North America, and *M.yunnanensis,* from China.

The Ashes

Fraxinus excelsior 'Aurea' is the Golden Ash, which will give rich golden-yellow tones; 'Raywoodi', the Claret Ash, was raised in the famous South Australian garden of that name, and turns a rich wine-red.

The Oaks

Quercus canariensis, the Algerian Oak, will hold onto gold-tinted leaves early until winter. *Q.palustris,* the Pin Oak from North America, has deeply-cut and toothed leaves that colour deep red - there is, or was, a form called 'Macedon' which occurred freely on Mount Macedon - one wonders how many remain. *Q.coccinea* is the Scarlet Oak, also from North America, which colours red. All these Oaks, needless to say, need a cold climate to colour well.

Other trees

Carpinus betulus, the European Hornbeam, turns yellow in autumn. *Liquidambar styraciflua* is widely planted and notable because it is one of the very few trees that will give reasonable autumn colour even in the mild areas; the form called 'Festeri' hangs onto its foliage rather longer than the type.

Parrotia persica, the Persian Witch Hazel, is a medium sized tree that colours brilliantly to gold and crimson. *Amelanchier canadensis,* the Shad Bush from North America, turns a lovely russet red. *Gleditsia triacantha,* the Honey Locust, also from North America, turns yellow, as does *Halesia carolina,* the Snowdrop Tree, and *Koelreuteria paniculata,* the Golden Rain Tree from China and Japan.

Nothofagus fusca, the New Zealand Red Beech, is a handsome tree that turns to red and copper. *Nyssa sylvatica,* from North America, will give red and yellow as well as green colourings all at the same time. *Pistachia chinensis,* from China, will turn brilliant red. *Liriodendron tulipiferum,* the Tulip Tree, is a very lovely tree that give yellow autumn colouring, and finally mention must be made of *Metasequoia glytostroboides,* the Dawn Redwood, the only conifer to turn apricot in autumn.

Shrubs

One of the finest shrubs for autumn colour is *Euonymus alatus,* the Winged Spindle Tree from China and Japan - perhaps the only shrub to turn bright pink in autumn.

Two species of Clethra, *C.delavayi* and *C.barbinervus,* will give a range of orange and yellow tones. *Enkianthus campanulatus* is a lovely shrub, related to Andromeda, from Japan, and will turn to shades of gold and scarlet - it is one of the best.

Cotoneaster bullatus is a deciduous Cotoneaster which gives good autumn colour. Among the Viburnums some of the best are *V.opulus,* the European Guelder Rose, which will turn to a rich red if the climate is cold enough, and *V.tomentosum.*

Among the Dogwoods are *Cornus florida* and *C.baileyi,* from North America, while *Vaccinium corymbosum,* the Blueberry from the eastern United States, will give lovely shades of scarlet and gold.

Roses for Autumn Colour

by Trevor Nottle

"Roses for autumn colour - yes, he's going to go on about the glorious flowers roses produce in autumn. I've read all that before and no doubt he'll go into all the expensive new roses he grew this year . . . think I'll give it a miss".

Familiar sentiments? I am sure that we all get just a little tired of sifting through the king-tide of superlatives which annually floods the horticultural press at this time of ordering roses for the coming planting season. Rest assured that I do not intend to add to the inundation an overflow of more good news concerning rose releases for 1983.

When I talk of roses for autumn colour I do not mean the flowers. I mean roses that contribute to the autumn colour scheme by their foliage turning and their fruit ripening.

Roses which provide autumn colour will not be found among the usual plastic perfect hybrid teas and floribundas. Instead we must look to the species roses - the wild ones, to find leaves and fruits which develop autumn colour.

There are two groups of wild roses which add to the autumnal display - those that produce heavy crops of berries (hips) and those that produce both berries and coloured leaves. They are all free-growing shrubs and must be allowed to grow that way, so that the full beauty of their flowering and fruiting can be enjoyed. They cannot be thought of in any way as being like H.T.s or floribundas, for their management is the same as for other flowering shrubs; dead and spent wood is removed leaving strong young growth and mature flowering wood.

Most prominent of the fruiting rose are the Moyesii group. These roses come from central and western China and were named after a Reverend H.C. Moyes of the China Inland Mission. Missionaries of those times spent a good deal on their off-duty hours exploring different aspects of China and Chinese culture. Among those who used their spare time and travelling to investigate the local flora were Armand David, Father Augustine Henry, Pierre d'Incarville, the Reverend Peter Osbeck and the Reverend Christopher Ternstroem, Jean Delaway, Jean Soulie and the Reverend Moyes. There were many others who made their own small contributions through seed collections, preparation of herbarium sheets and collections of local flora. Among those commemorated in the names of roses are *R.davidii, R.souliei,, R. henryi* and *R.moyesii.*

The Moyesii group are all tall, open shrubs of up to four metres in height; they have light yellow-green bark and few thorns, most of which tend to be almost paper-thin, large and triangular with long fine points. The leaves are made up of eleven to thirteen leaflets which are almost round - the effect is decidedly delicate and ferny. The flowers are large and usually single (approximately five centimetres in diameter); the colour range is limited to an assortment of very cheerful reds. All of the following are worthwhile garden shrubs: *R.moyesii* Geranium (bright tomato red), *R.moyesii* Highdownensis (coral pink), *R.moyesii* Sealing Wax (scarlet), and *R.moyesii* Fred Streeter (hunting pink). Obviously only one would be needed, or maybe two, to make a good display in autumn.

The fruits of the Moyesiis are large, smooth and bottle-shaped with prominent twisted bracts at the end and a few glandular hairs scattered over the body of the fruit. They are clustered

Roses for autumn colour (cont)

along the branches in bunches of five to nine. As our particular concern is autumn colour I must record that as summer advances the hips develop in size (up to four centimetres in length) and ripen from a light apple green through shades of muddy yellow to scarlet-orange. Highdownensis is the exception which has pink tinted hips.

Allied to the Moyesii group are *Rosa davidii elongata, Rosa sweginzowi* and *Rosa setipoda.* All are tall, slender, open shrubs with ferny foliage and the characteristic flask-shaped fruits. *R.davidii elongata* has small fruits (three centimetres in length) which have a scattering of glandular hairs all over them. When ripe they are a brilliant glossy red. *R.setipoda* also has small hips, but they are perfectly smooth and not so glossy. What it loses in comparison of fruit it makes up in stature - it makes a splendid tall shrub with an airy grace that outshines all this ferny-leaved tribe.

Almost at the other extreme for this group is the magnificent *R.sweginzowi.* It is still a tall arching bush with ferny leaves, but it has a heavy ornament of paper-thin large triangular thorns. The foliage is tinted brownish-red. The pink flowers set a profuse crop of hips - I have counted up to seventeen in one cluster and they hang thickly along the canes. Tinted with brown, the smooth fruits turn from greenish-bronze to a ruddy copper as they ripen. So heavy is the ripe fruit that the branches are weighed down until some of the longest canes touch the ground. Truly a spectacular autumn show.

The Rugosa roses from Japan and the sea-shores northwards around Siberia and Alaska are moderately well-known as thoroughly reliable flowering shrubs. Roserie de l'Hay (magenta) and Blanc Double de Coubert (white) are two widely planted doubles, but it is the single fruiting sorts that are so useful for adding to the autumn scene. *R.rugosa Scabrosa* is in every way the giant of the group - large leathery veined leaves, large magenta flowers and fat round fruits larger than crab apples. The smooth green fruits are borne in clusters of five or so, and ripen to bright scarlet. Scabrosa will make a very large shrub up to three metres in height. Somewhat lower, usually about one and a half metres high, is *R.rugosa alba.* The pure white flowers are still quite large (about seven centimeters in diameter) and the hips are only slightly smaller than those of Scabrosa. Frau Dagmar Hastrup is an almost prostrate Rugosa hybrid with pale pink flowers, typical heavy, veined leaves and large round fruits.

An added bonus with all three of these Rugosas is that when autumn comes round the large leaves turn a pure buttery yellow before falling. To get the best colour it is wise to ensure that the roses do not want for water at the height of summer. Not that the plants need much water but they should not reach the stage where the leaf edges brown off. The richness of the autumn gold will be dulled if the foliage is dehydrated in mid-summer.

Another group of roses which will develop really good autumn colour comes from America, in particular the eastern states. They are frequently found growing in damp places and on the edge of woodlands. The best by far are *R.nitida, R.foliolosa* and *R.virginiana.* The first and last are well established in Australia; I am not certain of *R.foliolosa* being here but I think it is likely to be represented in at least one Botanic Gardens.

R.nitida is a low growing shrub about one metre in height with glossy leaves of a bright green. All the new growth is bright reddish. The deep pink flowers set a good crop of bristly red hips. In autumn the leaves turn a vivid scarlet-orange.

R.foliolosa is very similar in size, fruit and autumn foliage; the difference between it and *R.nitida* is that it has very large flowers - that is in late summer.

R.virginiana is somewhat taller, maybe two metres, and has elongated, bright green glossy leaflets. Towards the end of summer the leaves turn deep red, and with the cold frosty nights of autumn change to a vibrant orange-red. These are spangled with highly polished bright scarlet berries, perfectly round and clustered in large bunches on short side branches. These berries rise from pleasantly pink flowers which appear in mid-summer. There is also a white form (not in Australia, I think), and also a double pink form which has very beautiful flowers similar to Cecile Brunner. It is called Rose d'Amour or St. Mark's Rose. Although it sets no fruits it has the spectacular autumn foliage of its single-flowered forbear.

So there you are - not a single mention of hybrid teas or floribundas, and a few ideas to stimulate your appreciation of roses - not as flowering plants but as flowering shrubs with several seasons of beauty.

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The Education of a Gardener

A hundred years or so ago young gardeners on large country estates learned their trade the hard way. They lived in a 'bothy' which normally adjoined the potting shed, and worked twelve hours a day, with perhaps a half-day off each week.

That their training was thorough, as well as rigorous, will be seen from the following letter, written by Jonathan Emms to the Macleay Chronicle in October 1897; this has been sent to us by Mr Emms' grandson, Mr Keith Ingram, of Mount Tomah, in New South Wales.

Jonathan Emms trained as an apprentice gardener at Somerleyton Hall, in Suffolk, England, in the 1850s. The Hall was owned by Sir Morton Peto, a remarkable man who began his life as a bricklayer, and later became a builder and entrepreneur, and also a Member of Parliament. He built Somerleyton Hall in 1844, and became bankrupt over its lavishness. The reference to Sir Joseph Paxton in the letter is interesting, as records show that Paxton designed the glasshouses at Somerleyton, probably at the same time as he was working on the Hall for the Great Exhibition in London (which was later re-erected on a different site as the Crystal Palace); this would have been at about the time that Emms started his apprenticeship at Somerleyton.

Jonathan Emms left England for Australia in 1856, at the age of 18; he spent five years gold mining in Victoria and another year in New Zealand, before settling on the Macleay River in New South Wales in 1864. For 18 years he was a nurseryman in Kempsey, and then for nearly 20 years an orchardist and vigneron at Greenhills, near Kempsey. While he was in Victoria his father visited him from England, and the two of them laid out several gardens in St. Kilda. He died in 1909, aged 71.

The Macleay Chronicle,
October 21, 1897
Correspondence

We do not hold ourselves responsible for the opinions expressed by our correspondents.

Practical Education

To the editor of the Macleay Chronicle

Sir, — I read in a late issue of your paper some interesting matter re the introduction of fresh subjects into our public schools, viz., Agriculture, chemistry, &e. Now as these subjects could not be taught until the youth had received a fair ordinary education and was, say 14 years of age, perhaps something more practical would be better to develope his muscles than to be poring over books day after day and which might tend to impair his health, and surely the teacher could not be expected to teach him practical lessons, as many of our teachers were never outside a public school more than a few hours a day for exercise, and I think you will bear me out in saying that in order to learn anything thoroughly, you must do it, not read of it only. Now, if I am not trespassing on your space to much, I will show what to my mind is better. Some of the methods adopted for making a lad useful in one of the large gardens of England, where almost everything was grown systematically. On entering Sir S.M. Peto's gardens at 14 years of age, not under, the overseer would kindly tell the lad what he would be required to do. Some things might not be pleasant, but they must be done if he was ambitious enough to try and become a second Sir Joseph Paxton. Besides the overseer there were many others under him, who had gained much practical knowledge in the same way, and were qualified and expected to teach the lad how to do his work, as there were many different departments and a good hand at the head of each. To relate my own first year's experience may serve my purpose now. The hours were from 6 a.m. to 6 p.m. summer and winter, an hour for breakfast and the same for dinner. My first job was to wheel coal and coke to the furnaces of the forcing departments every day. I had to go round to the heads of the different departments get the men's time and an account of the work done, go to the overseers office and enter it all in the books. Often I would have to go with the overseer, carry the pegs and chain and assist in setting out work such as roads, paths, levelling, trenching, digging holes for trees in the plantations. A little of the work would sometimes be done for an example. When the work was done my services were required for measuring, counting the holes &c., as this kind of work was often piece work to labourers, the measurements were given to me and to others at night to work out and results handed to the overseer in the morning and compared with his own. All through the winter and on cold days I had to look after three furnaces, on wet days pot plants, make sticks for sticking plants, tie plants into shape, wash pots, clean plants with insecticides, garden engine or syringe, fumigate &e. In the noon hours two or three of us would take our dinner in our hands and go round the gardens to get the names of plants and trees, as everything was labelled, enter them in our pocket books, find out their natural habitat, the soil required to grow them, &e. Books on Botany, Catalogues, Essays, &c., were kept for the use of those who were studious. The next and following years I had the detail management in other departments. Visitors by ticket were allowed to go through the gardens every Wednesday, each party, or when there were many, two or three together, attended by one of us, who was expected to answer questions put to us. If we could not answer the question we would ask another who could do so, which served the purpose of testing our memories relating to the names and mode of culture of the various crops, trees or plants, as the case might be. We were allowed to take what was given us, give the overseer half and the balance was equally divided between the classes, say 2 or 4 in each class, the older and more experienced were expected to get more. This money was chiefly used in purchasing literature for pleasant reading or study. We had all the best London newspapers published. Many young men have obtained excellent situations through these visitors from all parts of the world, as an excellent opportunity was given them for proving the efficiency of the man. When experiments were tried as many as could were told to be present. New fruits and vegetables were also tested and the opinion of each and all obtained. Now sir, if similar methods were adopted to educate our lads in the many different professions and occupations, might we not expect them to become more useful men?

Yours &c.—J. EMMS

Greenhills, Oct. 15, 1897

Ivy 'Geraniums'

by Betty Hudson

Ivy 'geraniums' - familiar to us all - commonly grown outside a front fence, alongside paths, in window boxes and sprawling over old tree stumps. Botanically *Pelargonium peltatum,* this branch of the *Pelargonium* genus has retained its popularity for hundreds of years, no doubt due to the free-flowering and easy-care nature of the plants.

Originally named *Geranium peltatum* by Linnaeus in 1753, the plant was re-named *Pelargonium peltatum* by L'Heritier in 1789, peltate referring to the shield-like leaves, the petiole being attached to the centre of the blade.

This plant was introduced into Holland in 1700 and into Britain in 1774. It is one of the ancestors of the thousands of ivy-leaved pelargoniums available today and may still be found in its natural habitat - the Cape Province of South Africa.

Ivy-leaved pelargoniums may be divided into four main groups: long-noded, short-noded, fancy-leaved and miniatures. These groupings are useful to consider when choosing a cultivar for a particular purpose or position. For example, if you are looking for profuse growth to cover a bank, tree stump, old fence, etc., then the long-noded sprawling types would be most suitable. There are many to choose from, but here are a few:

'Madame Crousse' - a semi-double mauvey-pink.
'Fire Dragon' - double vermillion flowers with velvety sheen.
'Mrs Banks' - white flowers, pink feathering.
'Mexican Beauty' - semi-double blood red flowers.
'Rouletta' - a sport of 'Mexican Beauty' - this plant always causes a sensation with its white flowers edged in red.
'Jean Roseleur' - semi-double, rose pink flowers with petaloid formation in the centre.

Short-noded, more compact growing plants include:
'Sybil Holmes' - double pink rosebud type flowers.
'The Blush' - light pink rosebud.
'Giroflee' - deep purple double flowers.
'La France' - deep lavender, large, loosely formed flowers, with darker feathering.
'Mrs H.J. Jones' - double pink flowers, edges of petals serrated with darker pink marking.
'Snow White' - double white, compact plant.
'Patricia' - the palest of pink double flowers.

The above cultivars are most suitable for hanging baskets or, alternatively, may be trained up a support.

Some of the most striking ivy-leaved pelargoniums fall into the fancy-leaved category:
'White Mesh' - leaves veined pale yellow, semi-double pink flowers, vigorous grower.
'Sunset Marble' - as the name suggests, the leaves have a marbled effect of green and white. In the winter months they also take on a pinkish-mauve effect. Flowers double mauve, but only appearing in spring. This plant makes a truly delightful hanging basket. It is a comparatively slow grower, requiring an occasional tip pruning to maintain a good shape.
'L'Elegante' - greyish-green leaves edged white. Also takes on a purplish tinge around the extreme edge of leaf, if kept on the dry side and not over-fed. Single white flowers with reddish-purple feathering. Again only flowers in spring.

Pelargonium peltatum
("ivy pelargonium")

'Sallen' - yellowish markings on leaf, single pink flower.

Falling into a category all their own are the miniatures:
'Gay Baby' - tiny white flowers tinted lilac.
'Sugar Baby' - double pink flowers.

Both these are good for ground cover, in a small rockery or hanging basket. These do not require pruning but do benefit from an occasional 'tidy up' by removing leaves and flower heads.

The long trailing types, of course, do require pruning - in Sydney March is the best time. Remove up to two-thirds of the plant (you could start a nursery with the cuttings!)

The main pests of the ivy-leaved cultivars are caterpillars and mealy bug. If spraying is required, a carbaryl-based spray is recommended for the caterpillars and Malathon® plus white oil for the mealy bug.

All of the above-mentioned cultivars are readily available from specialist 'geranium' nurseries - plus many more too numerous to list in this article.

Gardening in the Alice Springs Region

by John Blakeman

An invitation to write an article on Gardening in the Alice really sets a man back on his heels to think.

How and why is it different from any other place? First we get the extremes of temperature -5 or -6 during some of our short Winters to the above 40s for weeks on ends during our long summers, but we do get a delightful spring and an autumn which could be another spring. Plants grow at a fantastic rate during these seasons only to be steadied down by the hot days of summer or by a heavy frost which blackens all the young growth put on by the perfect growing conditions of autumn. Like any other place no season is like the last, no season is just what we expected, and no season is perfect for your plants.

But then, in the Alice we grow such a wide variety of plants, bananas from the tropics and daffodils from cold England in the same garden, pawpaws and apple trees side by side and we grow all other interesting and delightful plants we can get our hands on without regard to where they originated. To do it we need to make use of all the natural micro-climates that can be found in any house garden and add a few of our own contriving; with that wonderful world of plastics at our elbow this is not too difficult. People complain about the plastic world our generation lives in but what would our plants do without it?

Many of the Alice gardens sit on 40 metres of sandy loam and in spite of what the book say about roses needing a clay base for their roots, spring and autumn roses are of a very high standard and our citrus fruits compare well with the World's best - grapefruit for instance have none of that quinine taste and can be eaten like oranges. Stone fruits are being grown in home gardens and are worth their place in the scheme of things, although care must be taken to plant the varieties that suit the district. i.e. an early apricot will be loaded with fruit, a late variety of the same size may produce ten apricots of which the birds will take nine and the other one will fall and be lost.

Pests, yes, we have them all, or think we do - but that's gardening. To sum it up - two seasons of pleasurable gardening, with a long hot summer and a short cold winter in between them. You can grow anything you have a mind to grow with water and shadecloth to help but you'll have to fight an army of pests to have it for your own use, but again, that's normal gardening isn't it?

A new method of raising cuttings

In this method a 8in x 36in sheet of clear plastic is laid flat and covered for half its width with damp spagnum moss, peat or sand ¼in deep. Hardwood or softwood cuttings of normal length, treated with rooting hormone, are laid across this 4in band of medium, parallel with each other and 1in apart (more if they have foliage) with the bottom ends 1in from the edge of the medium; thus 3 to 5ins of a normal length cutting is left "above ground", protruding from the medium.

Then the bottom half of the plastic is folded-up over the cuttings and the medium, and the plastic is rolled up from end to end and held with a rubber band; it is then stored in a frame or anywhere affording light and proper temperature. Water if needed is poured through the top as if into a pot. The cuttings are removed when roots ½in or more have been formed.

(from "The Avant Gardener", published by Horticultural Data Processors, New York)

Box "Balls"

Clipped Box "Balls", in either standard or half-standard form, were used extensively years ago as garden features, often in tubs or pots at the sides of flights of steps or on entrance porches.

These are now available from J.E. & P.E. Acott, Bowen Street, Trentham, Vic. 3458 (telephone (054) 24 1532). (Mr and Mrs Acott also have a good selection of Maples, deciduous Azaleas, and both tree and herbaceous Paeonies), and from The City Gardener, 875 High Street, Armadale, 3143.

Hidden hardiness

A study at the University of Minnesota Landscape Arboretum used laboratory procedures to determine the hardiness levels of several different hardy ornamentals. The results were then compared with the zone recommendations given in standard reference books; this showed that many of the plants tested had a greater mid-winter cold tolerance than their hardiness ratings in the reference books inferred.

An explanation for this has been given by Ross Clark, Curator of Education at the Morton Arboretum in Illinois. He says, writing in the Morton Arboretum Quarterly, "The ancient relatives of a species . . . may have survived over a much broader area and become adapted to environmental extremes with which the present species no longer has to cope. However, the environmental tolerances built into a species thousands or millions of years ago may still be present in the genetic make-up of the species to-day".

It has been suggested that in nature conditions unfavourable to delicate seedlings may prevent a species from spreading beyond its natural geographic range, but when gently nurtured under cultivation it can survive to express its genetic adaptability.

Gardening in Western Queensland

by Deborah Law

All Westerners, both those who live on the land and those in towns, have developed a natural ability in observing Nature - the soil, the seasons, and their effect on everything that grows.

My attitude to life is to look for the advantages in any given situation, and to use these against the seemingly overwhelming problems that arise. Maybe I can explain this best from my own experience.

As a new bride, I arrived at dusk after travelling over seventy-five miles of dirt roads, at a square box of a fibro house, sitting on a bare stony mulga knob. A windmill supplied artesian water; there were six inches of gravelly soil on top of rock, and to complete the scene four miserable Tamarisks surrounded by four equally miserable old car tyres filled with wood ash.

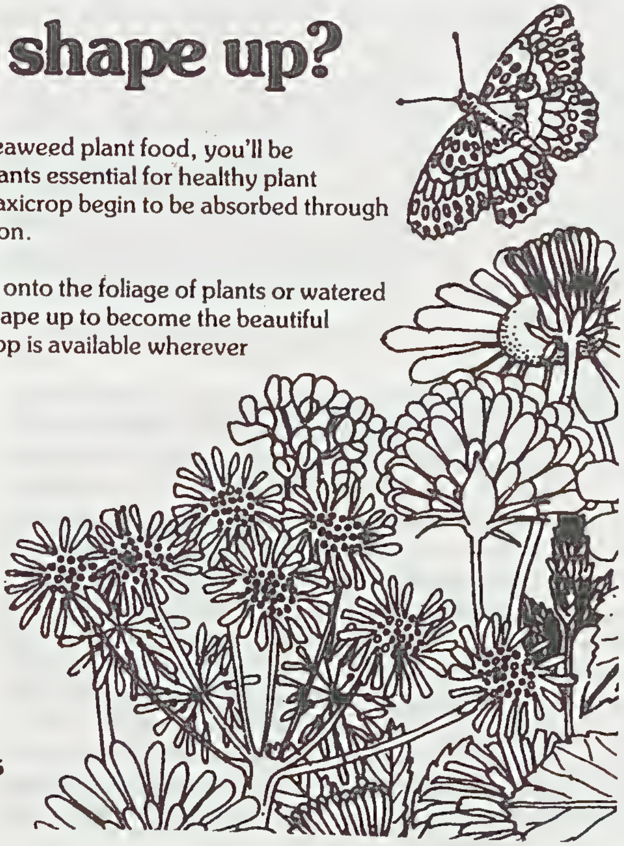
But on the positive side, here was a climate where fungus diseases - like rust, black spot, powdery mildew and grey mould, which plague East coast dwellers - were virtually non-existent. The soil was well drained, as the rock was relatively porous. The adjacent shearing shed and yards were filled to capacity with sheep manure. Large quantities of leaf mould were available from the flood gates, inside gullies along fence lines. Also there was a constant, though carefull rationed water supply, which was pumped into open tanks which cooled it.

Creating the environment

To begin with, it was necessary to create a more favourable environment. I cleaned out under the shed and spread the manure six inches deep over the north and east of the house yard. Then I planted kikuyu runners, rather than couch as kikuyu has a deeper and stronger root penetration, and the dense sward allows moisture to be contained and then expired to create humidity, thus keeping the soil moister and cooler. Although kikuyu grows rapidly and needs mowing regularly in hot weather, it does not seed readily so the lawn clippings can be used for mulch. Some were put back into the lawn, and the excess was put lightly round the plants, not too close to stems and not too thickly.

With the lawn established, a new environment - like an oasis - was being created. Now it was time for the first trees. Initially *Eucalyptus cameldulensis,* the Red River Gum, was dug from the local creek banks after rain. Then an Albizzia was grown from seed - a few years later being able to sit under the canopy of this tree was one of my greatest pleasures. A Jacaranda, Laurustinus, West Australian Eucalypts (quite a few of them), Hibiscus like 'Pride of India' and 'Wilder's White', Bauhinia, Bottlebrushes, Melaleucas and Tea Trees were planted along the fence. Vines were used to cover the ugly wire netting fence; for example Mile a Minute Morning Glory on the exposed western side - you will be familiar with this from old station homestead yards. Then Virginia Creeper, which colours better with frost, Trachelospermum, commonly known as Star Jasmine, beautiful *Petrea volubilis, Bignonia venusta* and *rosea* (I use the old and familiar names), Tecomaria, used on the east coast as a windbreak on small farms,, yellow flowered Jasmine, Honeysuckle, *Clerodendron splendens* with its brick red flowers, beautifully scented *Jasminum polyanthus,* Wistaria and grape vines, both fruiting and ornamental. These did more to create the oasis effect than the trees as they were fast growing, and lessened the harmful effect of the hot winds on the rest of the garden. Poor Man's Beans were also used with good effect over the fowl run, and provided us with plenty of fresh greens.

(continued over)



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By now I had planted fruit trees - figs 'White Adriatic' and 'Brown Turkey', Myer and Lisbon lemons, Mandarins - both loose and tight skinned varieties, Valencia and Navel oranges, Marsh's seedless grapefruit, four olive trees as well as peaches 'China Flat' and 'Elberta'. These had mulch placed around them and were fertilized with sulphate of ammonia and manure. The sulphate of ammonia helped to correct the alkalinity problem and also replaced the nitrogen lost through the decomposition of the mulches. Care needs to be taken, though, in applying all fertilizers; nitrogen (e.g. sulphate of ammonia) in particular needs to be lightly applied, like poppy seeds on a bread roll.

Western soils, due to climatic conditions, have little or no organic matter in them. They require mulch for insulation against heat and to open them and make them crumbly in texture.

The growing season

It is early autumn that growth in the garden, in the west, is the most satisfying. Cooler weather enables the growing of vegetables and flowers with relative ease.

This is the time to get pleasure and satisfaction from what we are doing and to extend our knowledge from annual plantings into perennials, when the weather is kinder and growth can be made. With a little thought about evergreen plants - fertilizing at the onset of cooler weather - we can manipulate seasonal growth to suit us; fertilize in late autumn and again in late winter, encouraging fresh leaves now, not in summer, which is the time to induce a false sense of dormancy by withholding nutrients. I did this very effectively even with roses.

One of the main requirements of plants seems to be not generally understood - an open and friable soil. But 'what with' and 'why'? An open friable soil contains adequate humus, water and particles of air. These combine to insulate the soil from heat and cold and to provide drainage, that is replacement after heavy rain or water-logged conditions to, once again, the soil-water-air ratio that is required by the plants. Further mulching with humus or well-rotted manures protects the plants from too rapid drying out and keeps the soil surface cool, enables rapid growth of the finer roots on plants which are the feeding roots; a bonus with mulching is the prevention of weed seeds from germinating.

The seasons now is perfect; a balmy autumn through to spring is the perfect growing time in the west - perfect for sowing seeds and planting perennials while the sunlight hours are still optimum for plant growth.

So to our plan of attack, for the first cool change, in February or early March.

Preparation of garden beds in clay soil areas, in particular, needs some cunning. The sods in my garden, hard-baked clay interspersed with stones, would dig out in foot by foot chunks - that is if I could get the fork in! Even then I could not break those lumps up any further. How I used to yearn for the sandhill of my original home! But a sprinkler on the bed for half an hour, a few hours wait - and the problem is solved, the soil crumbles (but don't let it get too wet). Later I learned that this is the time to incorporate the humus, plus a little dolomite (forget agricultural lime as with bore water it only compounds the alkalinity problem). I also added superphosphate for root growth, and a layer of manure; then the sprinkler for half an hour, then a dig to ensure that the topsoil is turned over. The soil then had a glorious texture! I made paths higher than the garden beds - raised beds are for coastal and high rainfal areas, where drainage after heavy rain is essential.

By mid-March, sow seeds in polystyrene fruit boxes that have been half filled with good fine soil; read the directions on packets and follow them, for seed merchants are true professionals. Thin out seedlings - better to have the right amount of sturdy seedlings than twice the amount of weak stemmed ones from overcrowding. Keep the boxes in a cool but sunny spot early on, then move them gradually into the open to harden them off just prior to transplanting. An opened-up red onion bag is excellent placed on top of a freshly planted carrot bed, because the mesh protects the ground surface, but be careful to remove it as soon as germination starts.

Plant flower seedlings now as well - poppies, pansies, carnations, painted daisies, snapdragons - and definitely stocks. East coast stocks cannot compare for size, quality, and especially perfume.

It's time, too, to plant bulbs - jonquils, daffodils, gladioli, snowflakes and freesias - and anemones. Establish these on the north and east sides for preference.

Contrary to tradition this is the time to establish trees, shrubs, roses and vines. The spring planting tradition was established in the days before plastic pots and containers and was meant for bare root stock in an English climate. Their summers are more comparable, in length of growing hours and temperature, to our winters!

It's time to establish violet runners, geraniums, daisies - by cuttings. These grow to perfection to the envy of our city cousins. And don't forget sweet peas, but they must be in by St. Patrick's Day.

Try to spend some time each morning admiring each stage of growth, and give a quick glance in the heat of the day for stress signs - like a wilting leaf, the premature death of a flower, loss of flower leaves, or burnt tips on new foliage.

A word on indoor plants

Some people put an ailing indoor plant, straight from a shady living room, into the sun and leave it there all day. Plants take about six weeks to get used to an environmental change. I had a couple of nooks on the east and north sides of the house, under the steps, for my plant hospital, where I rejuvenated Maidenhair fern and gave other plants a spell of outdoor air.

Rotating crops

As seasons came and went, I learned to rotate crops to cater for their main requirements. Freshly fertilized beds grew leaf crops like lettuce, cabbage and tomatoes. When these were harvested the beds were used for root crops.

Develop a section of the new garden at a time, starting with the north and east sides; then as one becomes familiar with the soil and particular plants, and their ability to grow well in the area, move on to establish the more exposed sections.

Watering

Because of the restricted water supply, dependant on wind and the number of sheep using the house bore, I had to water quickly and thoroughly while no one was looking! I learned later that this was perfect, as it flushed the harmful excess of mineral salts from the bore water through the soil to below the root area of delicate plants. However, I did find that in hot weather this type of watering could cause a boiling effect when temperatures soared. By accident I also discovered that watering is best done around mid-day, when the temperature is highest, rather than in the early morning; this way the soil is cooled by the water and

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does not have time to heat up again before dusk; then during the evening, night and early next morning, excess water is naturally drained through the soil to be replaced once more by particles of air, so vital for healthy plant growth. Have you ever noticed that on the side of roads grass grows longer where the loose soil is thrown by vehicles? That soil remains loose and has air! Water by itself will not burn normal plant leaves. In my nursery I have an automatic sensor that turns on the sprinklers when the temperature rises beyond a certain point and rotates from nursery bed to nursery bed until the temperature starts to fall. The same applies to frost - if you can get out and water or wash frost off leaves before sun-up most damage will be averted.

Remember that the important thing is the creation of an environment. Don't plant too many trees and shrubs at a time. It is the initial three to four months that are vital for establishment. Nor can we expect a tree to thrive if it is planted in a hole dug to size in hard clay soil - this acts like a grave, restricting root growth, and imprisons excess water: rather, make a small garden bed around new trees.

Vegetables

Once again, use newly prepared beds for plants with greedy appetites. Plant bean seeds early in the season to get a quick crop before the heat strikes, and snake beans later for mid-summer. Try a sheet of Weldmesh joined and stood up on end like a cylinder for a moveable trellis.

I learned, too, after being inundated with sweet corn, to plant a smaller block at a time, and every three to four weeks. Later, as the soil for the corn was always well prepared the same beds were used for lettuce, a few cabbage, even carrots - I left the dried corn stalks in, standing like sentinels against the heat. In summer we had tomatoes by the bucketful. I found staking tedious and ineffective, so folded a Weldmesh sheet length-ways, like an extended triangle, over the length of the garden beds and planted seed directly against the outside width of the V. I later thinned back to one plant. These tomatoes did not required tying and by leaning them towards the apex in the centre they were protected from the heat and robbing Bower Birds.

Plant squash, ziucchini, rockmelons and cucumbers early in the season, and give them a chance to cover the ground early. Pumpkins - like Green Hubbard and Trombone, can be planted on the perimeter of the yard and allowed to cascade all over the back fence, out into the paddock. Some people don't even like a tree down there in case they get leaves in their gutters!

So with a good lawn to create the initial oasis effect, you can establish a section at a time - maybe a paling fence or a trellis placed around the garden at strategic spots will give a protected nook for treasured plants; even a few branches felled from trees and placed near newly-established plants does this quite effectively. Keep the lawn mown regularly -three times every two weeks if necessary, but don't scalp it with blades too low. Summer lawns should be cut a trifle longer to enable them to protect their own roots - less water is required to maintain a good sward and to help the whole house yard and its plants.

Enjoy your gardening, it rewards with sheer pleasure!

Note:

Deborah Law is now the proprietor of Tamborine Mountain Plants, at Eagle Heights, Queensland, a specialist fuchsia nursery.

News briefs

Pine cones shredded to particles no larger than 0.5 cm have proved to be a useful alternative to spagnum peat moss in a typical sand/peat potting mix, according to two researchers at Auburn University, U.S. Analysis showed pH 6.2, small amounts of N.P.K. and traces of several micronutrients.

The U.S. publication Organic Gardening suggests this method of measuring the height of a tree. Stand a yardstick up and measure its shadow; then measure the trees shadow and multiply it by three; divide this number by the length of the yardstick's shadow and the result is the height of the tree.

A Banksia Festival in Melbourne

The Friends of the Royal Botanic Gardens, Melbourne, and the National Gallery of Victoria are holding a Banksia Festival this month.

World authority on Banksias, Alex George, together with flower painter Celia Rosser, will give illustrated lectures, and an afternoon visit to the Royal Botanic Gardens' annexe at Cranbourne is planned.

A most important limited edition 'The Banksias' by Alex and Celia, was pubished in 1981. It lists fourteen new species, with text by Alex and superb watercolours by Celia. This rare publication is said to be the most important work on Banksias for two hundred years.

The full programme for the Festival is as under:

Sunday 10th April 1983

2.30 p.m. Herbarium Auditorium, Birdwood Ave, South Yarra.
An illustrated lecture by Alex George, the author of 'The Banksias'. This will be accompanied by an exhibition of historic prints, drawings and paintings of Banksias from the Herbarium Collection.

Saturday 23rd April 1983:

2.30 p.m. 3rd Floor Theatrette, National Gallery, St. Kilda Road, Melbourne.
An opportunity to meet the artist of 'The Banksias', Celia Rosser. She will discuss her preparation for the books and display working drawings and the completed publication.

This talk will be repeated at The National Gallery on Wednesday, 27th April 1983 at 6.00 p.m.

Sunday 1st May 1983:

12.00 noon McClelland Gallery, McClelland Drive, Langwarrin.
1.30-2.00 p.m. Cranbourne Annexe, Ballarto Rd, Cranbourne.
A visit to the McClelland Gallery to view a contemporary botanical exhibition, lunch in the grounds and then visit the Botanic Gardens, Cranbourne Annexe to see the native garden and Banksia plantings.

Total cost of the three sessions to 'Friends' and Gallery Society members is $6.00 ($7.50 to non-members).

All enquiries to 'The National Gallery of Victoria', 180 St. Kilda Road, Melbourne, 3000. Telephone (03) 62-7411

The 'Banksia Festival' activities feature a tribute to the magnificent work 'The Banksias', watercolour drawings by Celia Rosser, text by Alex George published by Academic Press in Association with Monash University. The following background information about the book and its authors has been prepared by Diana McClellan for the Friends of the Royal Botanic Gardens, Melbourne.

The Banksias: Volume 1 published 1981

Monash University initiated work on this remarkable book aiming to create the definitive taxonomic work on the Banksias and at the same time producing accurate and beautiful life-size illustrations of all the Banksias. The size of the Banksia flower has dictated the size of the book - 770mm (30in) by 550mm (22in). Volume 1, covering 24 species of Banksias, weighs 18kg (40lbs). It is a limited edition of 720 copies, and a portfolio edition limited to 50 sets of plates plus introductory text.

Both Celia and Alex have received acclaim for this impressive work. There have been separate launchings in London, Melbourne and Sydney. Last October, at Government House, Canberra, Prime Minister, Mr Fraser presented the Queen with a copy of 'The Banksias' on behalf of the people of Australia. Celia, Alex and Professor Martin, Vice-Chancellor of Monash University were present.

Publication of the first volume of 'The Banksias' coincided with the XIII International Botanical Congress held in Sydney, August 1981. The second volume is scheduled for publication in 1985 and the third and final volume before 1990.

Celia Rosser: the artist of 'The Banksias'

Celia's love of painting wildflowers led to the publication of her book 'Wildflowers of Victoria' by Jacaranda Press in 1967. This same year the Maud Gibson Trust commissioned her to paint the six Victorian species of the genus 'Banksia' for the National Herbarium of Victoria. For the Cook Bicentanary her painting of *B.serrata* was presented to the Royal Society in London by the Australian Academy of Science. In 1970 Celia accepted the position of Artist to the Faculty of Science at Monash University and in 1972 Celia was seconded to draw the illustrations for Scott, G. 'Mosses of Southern Australia', London, Academic Press, 1976. It was towards the end of her detailed microscopic work on mosses that Celia was commissioned by Monash University to paint the Banksia species in watercolour. The publication of volume 1 of 'The Banksias' in 1981 was the result of the first six years' work on this projected three volume publication, and contains 24 illustrations. Celia paints at Banksia House, a small room adjoining the botany laboratory at Monash. For her painting the artist uses only Banksia specimens she has seen growing and collected herself. Some have been taken from the site at which the species were originally discovered by Joseph Banks or by collectors who followed him. Some flower heads contain hundreds of florets and paintings take at least 10 weeks to complete. Celia's dedication, genius and contribution to science was acknowledged by Monash University in December 1981 when she was awarded an honorary Master of Science degree.

Alex George: the botanist and researcher of 'The Banksias'

Alex spent his childhood and youth in Western Australia, home of 80 per cent of Australia's Banksias. In 1959, after graduating from the University of Western Australia he was appointed to the staff of the Western Australian Herbarium. Alex became especially interested in the family of plants called the Proteaceae and in particular the genus Banksia (a specific group of plants within the Proteaceae family) on which he soon came to be the recognized authority. In 1968 Alex was given the enriching opportunity of working at the Kew Botanic Gardens, London, as the Australian Botanical Liaison Officer. Early in 1981 he left the Western Australian Herbarium to join the Australian Bureau of Flora and Fauna as executive editor to the new Flora of Australia.

Alex undertook field work and research through publications and unpublished manuscripts in more than 40 botanical institutions in Australia and overseas. As a result, 11 new species and 9 new varieties have been described and 2 other species renamed to meet international nomenclature rules. Of course, as the number of known Banksias have increased, so has Celia's work.

Houseleek - *Sempervivum testorum.*

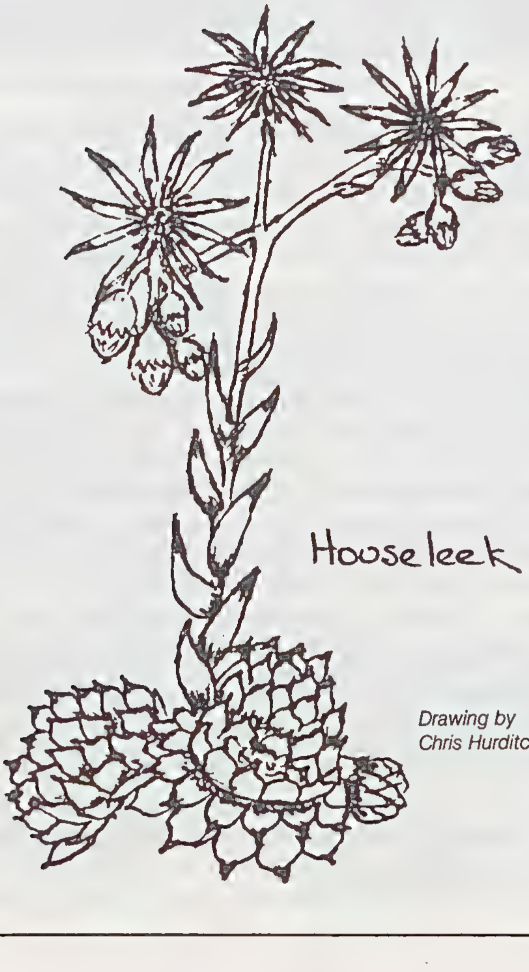
This little succulent herb has been grown around houses and on roofs for many years. The name is derived from the Anglo-Saxon 'leac' a plant, so that Houseleek means literally the House Plant. It was dedicated to Jupiter or Thor and was also called Jupiter's Beard and Thor's Beard as it's massive clusters of flowers were supposed to resemble the beard of Jupiter the Thunderer.

The Romans grew the plant in cases outside their houses as it was believed to guard against fire and lightning and we read that Charlemagne ordered it to be planted on the roof of every house, probably with this in mind.

It is a native of the mountain ranges of central and southern Europe and of the Greek Islands, although today it is found in many parts of the world. It is a perennial plant with a fibrous root and thick succulent leaves which enable the plant to survive in the driest of weather.

Medicinally, this herb has many uses. The leaves may be crushed and applied to the forehead as a cold poultice. They will help to relieve migraines and the headache that often accompanies fever. A hot poultice may be applied to haemorrhoids, ulcers and burns. It is also similar to Aloe Vera in that the leaves may be peeled and applied to cuts.

A drop or two of the juice of Houseleek may be placed in the eyes to relieve soreness and also to help with the removal of foreign objects. This rather insignificant herb has a wealth of uses and should be grown in all gardens and for those who are superstitious about lightning you could always plant one or two on your roof.



Drawing by Chris Hurditch

Herbs - some simple remedies

by Marilyn O'Dowd

There is an increasing interest in growing herbs for their medicinal properties. The range of books available on medicinal plants is very extensive and the list of plants can cause confusion as to which one is right for a particular problem. Without proper training it can be very difficult to choose the right remedy, for there are many factors to be taken into account when diagnosing a problem, especially when one considers the theory of treating the whole person rather than just the symptoms. Some plants can produce quick and dramatic results, and a wrong diagnosis can produce opposite symptoms. For example treating a suspected hormonal imbalance with Sarsparilla can sometimes throw one out of balance if the diagnosis was wrong. Generally it is better to seek professional advice when any chronic or serious problem needs treating.

It is interesting and rewarding to collect medicinal plants and maybe to create a physic garden, as was done by the Monks in the fourteenth century. Among the medicinals are some beautiful plants, like Lily-of-the-Valley, Fox-glove, Meadowsweet and Bears' Breeches.

Even after disregarding many of the medicinal plants as being of any use for home remedies, the list of useful ones can be a long one. There are many and varied ways of taking herbs as medicine, from tablets to eating the leaves, but for easy use at home it is better to introduce them into foods, which in many cases adds flavour as well as health benefits, or else to make them into a tea. Of course the everyday use of some, especially those like parsley, watercress and dandelion, can prevent serious problems from every happening - preventive medicine has always been far better than cures when permanent damage may already have occured.

A small tree that is often seen as a hedgerow plants is Elderberry; the flowers, made into a tea, work as a general tonic as well as aiding digestion, are are particularly good as a gentle pick-me-up. There are many varieties of Elderberry and the medicinal one is *Sambucus nigra*. Use any left-over tea as a face astringent - it is a mild toning lotion.

Chamomile tea made from the flowers of either *Chamomilla matricaria* or *Anthemis nobilis* is almost a necessity in the kitchen. A weaker brew for babies when they are teething, off colour or just can't settle down, works wonders. It is also good for children who are hyperactive, over-excited, tense or nervous. Not only is it good for children, it is for anyone needing calming down and especially helpful for the elderly who have trouble sleeping. It works specifically in the stomach area so is an aid to digestion after a busy and tense day. The German Chamomile *(Chamomilla matricaria)* is an annual, but one plant will invariably self-sow. The summer heat usually causes it to die off and seedlings start to appear as soon as temperatures drop. English Chamomile *(Anthemis nobilis)* is a perennial with a spreading habit and does not grow any higher than six to eight centimetres until flowering time. This Chamomile is often used as a lawn and is very good in shaded areas where grasses won't grow. The spiced apple scent makes it a delight to walk on. Both Chamomiles have white daisy flowers with a yellow centre.

For a stress headache that may be caused by a day in the city, a very relaxing tea can be made from Lemon Balm *(Melissa officinalis)*. The lemon flavour is refreshing, especially on a hot day, due to its effect of promoting perspiration, which in turn has

Herbs - some simple remedies (cont)

a cooling effect. Lemon Balm leaves can also be used in sweet and savoury dishes for a lemon flavour. Being closely allied to the mints, Lemon Balm is easy to grow and is a perennial. Usually by winter it starts to look straggly, so a fairly hard cut back does it good. Dry the cut leaves for winter use, as it won't grow much until spring.

The true English Dandelion *(Taraxacum officinale)* has the virtue of growing almost anywhere. As it acts directly on the liver, there are many and varied symptoms which it will relieve. Modern living often causes the liver to be over-loaded and the fact that Dandelion will pop up in the most unsuspected places may be taken as an omen. The liver is the organ which converts food into fuel for the body and it also removes the pollutants that are hard to avoid in our food. The root can be dried and ground into a coffee substitute and the leaves added to a salad make an interesting change. Learn to respect the Dandelions and make sure that they are'nt all weeded out of the garden.

Another tea for a hot day is Peppermint *(Mentha piperita)*. The flavour is very refreshing and it can be either hot or cold - try it as the base for a fruit punch. This tea is usually popular with children, especially with some honey and lemon added and served cold. Peppermint is a wonderful tummy settler after a big meal, and it will clear the head when suffering from a cold or influenza. This is a good tea to start with when getting used to herbal teas, because of its pleasant flavour. It is also a good one to mix with other teas that do not have a lot of flavour. Although a perennial, it will die right down in winter, so remember to dry some leaves, especially for the winter head colds.

Not only is Comfrey *(Symphytum officinale)* good in the compost heap, it is equally useful as a medicinal plant. There appears to be no valid evidence that Comfrey has any of the side efects reported from related plants, but making a tea out of the leaves with boiling water ensures its safety. The healing properties of this plant are so valuable that it is worth having a plant in the garden when there has been any body damage like surgery, broken bones and cuts. Allantoin is one of its properties and this is valued as a healing agent. Don't use Comfrey externally on broken skin as it is not an antiseptic, but is very useful when the wound is closed to prevent scarring. Regard Comfrey as a medicinal plant to be used when the need arises. Once a plant is growing it is difficult to move as the smallest piece of root will grow. During winter Comfrey can disappear completely, to re-appear in spring. A good supply of compost and/or manure will ensure a healthy plant.

A plant that is often known to farmers as a weed rather than for its medicinal properties is Horehound *(Marrubium vulgare)*. This makes one tea that will be better mixed with something more pleasant, like Peppermint or Lemon Balm, as it is very bitter. It's main claim to fame is the way in which it will speed up the process of a head cold. It promotes faster elimination of mucous and tones the respiratory tract. Chewing a couple of leaves every hour is another way of taking this medicine. Horehound is a perennial and is not fussy where it grows, so take care that it does not escape into the pastures.

For centuries Fennel *(Foeniculum vulgare)* has been regarded as the herb for weight reduction and it is now known that the main reason for this effect is its ability to balance and normalise the pancreas. It is this organ, together with the liver and gall bladder, that is responsible for the absorbtion of fats and sugars. So if obesity is due to the body having difficulty with absorbtion it can help. Fennel is a well known roadside plant, another that seems to be there to help modern civilization. Because of the usually polluted situation in which it grows naturally it is better to grown your own. As well as the leaves being used in salads, with fish dishes or as a tea, the seeds are a pleasant change in breads, biscuits and cakes, giving an anise flavour. It can be a perennial though it is often better to grow it as a biennial; it will grown in most soils in an open sunny position.

Celery seed *(Apium graveolens)* tea is one that should be regarded as purely medicinal and used with care. It is a very effective purifier, working through the bloodstream and kidneys to remove residues from the tissues and body structures. For arthritic and rheumatic sufferers it is especially effective in removing the residues that cause these problems. Make the tea in the usual way, use one teaspoon of seed per cut. Start with only one cup per day, as the level of tolerance varies from individual to individual. Let some celery plants go to seed to obtain a good supply.

For sore throats try some tea made from Thyme *(Thymus vulgaris)*. The strong antiseptic qualities of Thyme can fight the bacterial infection which causes sore throats and catarrh of the lower respiratory tract. It is especially beneficial to those who use their voices constantly, like singers and teachers. Also try diluted tea as a gargle for a sore or irritated throat. This is one of the well known kitchen herbs and a perennial plant that is easy to grow.

Another herb for babies is Dill *(Anethum graveolens)* - one of the best treatments for colic. A small teaspoon of Dill water after each feed can help ease the old problem of windy babies. Make it as you would any of the teas and store enough for a day in the refrigerator. It is also good for adults who have difficulty in eating some foods and need something to calm the gastro-intestinal tracts. The seeds are used medicinally because of their extra strength. Dill is similar to Fennel in appearance only the leaves have a greyish look instead of being bright green, and the flavour is quite distinctive. Its growth habits are the same.

Another general tonic is Angelica *(Angelica officinalis)*, especially good when one is suffering with a head cold. A tea from this plant is pleasant and sweet tasting and is often included in mixtures. Historically it has been used to prevent an illness becoming long term or chronic. It is best to treat Angelica an an annual, though during the year it can reach a height of almost two metres, going to seed in the spring. The seed needs to be planted when very fresh to replace the old plants. A shady spot is ideal as it is at home in a cool climate.

And for a clear head try Sage *(Salvia officinalis)*. The reason this works is that circulation to the head is greatly improved by a cup of Sage tea. Try it when studying as it will help your memory. Include Sage regularly in your daily diet. Another well known kitchen herb, and equally as good as a home remedy, Sage is a sun-loving plant that should be perennial, but it does have a tendency to turn up it toes and die for no apparent reason; so take some cuttings and always have some plants coming on.

By watching your diet and ensuring that there are plenty of wholesome and fresh foods included, and with the help of some of these home remedies you may never need to resort to the stronger methods of healing. Just by being outside in the garden producing these home remedies can be another step to good health.

Note: Marilyn O'Dowd runs Woodside Herbs, a specialist herb nursery at Kentlyn, near Campbelltown, in N.S.W. She holds a Diploma in Herbal Medicine.

Somerset Cottage

The Hemphills established their herb nursery at Dural, N.S.W. more than twenty-five years ago, and their name has become a household word in the world of herb gardeners and good cooks. John and Rosemary Hemphill have several well-known and authoritative books to their credit, like 'Herbs and Spices' and 'Herbs for all Seasons'.

They have all manner of herbs growing in their nursery - culinary, medicinal and aromatic, as well as a number of old-fashioned cottage garden plants. In the delightful little old-world cottage you will find the famous Somerset Cottage range of herbs and spices in jars, pot-pourris, herbal teas, and so on - and a good range of books.

Behind the cottage is a delightful 'secret' garden, full of old-world plants.

Somerset Cottage, at 745 Old Northern Road, Dural, N.S.W. 2158 (telephone (02) 651-1027) is open seven days a week.

Herb or Erb?

If you call a herb an erb your friends may think your education was not all that it might have been. But up till 1475 the word was erb, both in spelling and pronunciation, being derived from the French word erbe, which in turn comes from the Latin herba. At the beginning of the 16th century the Latin 'h' was re-attached but it remained mute until 1800, when the English started to pronounce the 'h'. The Americans, however, kept it mute and to this day what is a herb in England is an erb in America. So you may take your pick!

How to make a fragrant and lasting Pot-Pourri

If you have perfumed roses and lavender growing in the garden, as well as other fragrant flowers and leaves (scented-leaved geraniums, lemon-verbena, and sweet-smelling herb leaves) you have the main ingredients for making a pot-pourri.

Aromatic spices are blended with the flowery and leafy scents to give a warmly contrasting and interesting depth to theo blend, while powdered orris root (the root or rhizome of the old Florentine iris) helps to 'take up' the essential oils and to distribute them through the mixture while keeping it from becoming moist and mildewed. Essential oils keep a pot-pourri frangrant for a much longer time than if they were not used at all. The concentrated high quality Triad incense oils are excellent for this purpose and they are available in convenient small bottles in a very wide range of fragrances. At least two or three complementary but opposite-smelling oils should be used, such as a sweet and a sharp perfume, with the addition of a lingering fragrance like musk or sandalwood. The following list is a guide to start with . . . later you will find that the blending of the oils for your own pot-pourri is very individual.

Sweet: Honeysuckle, hyancinth, lavender, geranium, bergamot, jasmine, neroli, muguet, rose

Sharp: Boronia, lemongrass, lime, lemon, mandarin, petitgrain, pine

Lingering: Ylang ylang, sandalwood, frankincense, cedarwood, amber, lotus

METHOD: Flowers and leaves are gathered in dry weather early in the day before the sun has become too hot, then they are spread out to dry on racks or sheets of newspaper in a shady, airy place. (Scented leaves should be cut away from stems for quicker drying). When crisp-dry, measure the flowers and leaves (large leaves should be crunched by hand into fairly small pieces) into an earthenware or glass container with a lid. To 4 cups of dried material you will need about 1 tablespoon (½ packet) of orris powder, 1 teaspoon each of the oils of your choice (say, lavender, petitgrain and sandalwood) and 1 teaspoon of ground cinnamon. Mix orris powder and cinnamon together, than add oils and amalgamate. Sprinkle this crumbly mixture over the dried flowers and leaves, stir well, close up and leave for 2-3 weeks, stirring occasionally. The blend is now ready for putting into one large decorative bowl, or into several smaller ones. Pieces of cinnamon bark, whole cloves, bay leaves and dried strips of orange or lemon peel may also go into a pot-pourri mixture.

With acknowledgments to Somerset Cottage, Old Northern Road, Dural, N.S.W. 2158.

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Aloe vera and other Aloes

by Phil Britton

Aloe vera is a member of the Liliaceae family and is a native of northern Africa. Its common names are "Barbados Aloe", "Curacao Aloe", "Aloe", "True Aloe" and "Medecine Aloe".

It has a rosette of thick basal leaves with spines. The strong fibrous root produces leaves which are similar to the Agave but considerably smaller. The narrow lanceolate are 1 to 2 feet long and whitish-green on both sides, and they bear spiny teeth on the margins.

The flowers vary from yellow to purplish and are drooping. They can be found the year round. They grow in long racemes at the top of the flower stalk, which is up to 4½ feet in length.

Aloe has been widely used for many centuries. The first historical mention of Aloe is in the Bible, where it is mentioned that "species of frankincense, myrrh and aloes were burned for incense".

Many people in nearly every part of the tropical and sub-tropical world have used the fresh juice of Aloe for a variety of complaints. The fresh leaves can be split to expose the gelatinous juice and then rubbed on the skin for sunburn, other minor burns, wrinkles, insect bites, skin irritations and minor cuts and scratches.

The resurgence of interest in Aloe is due to their cosmetic value as creams and lipsticks and as a remover of blemishes and an improver of skin conditions.

The genus Aloe has over 200 species and all are thick leaved succulents. Besides growing wild, this perennial plant is also cultivated in the West Indies and other tropical areas. Aloes flourish in a variety of climates and in the poorest soil. *Aloe perryi* (Socotrine Aloe) is a semi-desert short stemmed, red flowered succulent with leaves spiny only on the margins. It grows wild on the island of Socotra. This plant was sought after by Alexander the Great in 325BC. It was valued as a plant purge, many believing that they should violently and completely purge their bodies of food and its poisons for at least three days of each month. It has been valued as a cathartic 1552BC.

In Victoria Roger Daff and his family introduced some 400 *Aloe vera* to their Heatherton Market Garden some six years ago as a trial. The number has now increased to 60,000 plants with an estimated value of around $5 million. Roger Daff's interest in horses led him to realise the full value of *Aloe vera* and other Australian breeders of standards and thoroughbreds have claimed success using *Aloe vera* on bowed tendons, strained suspensories or ligament damage.

The gel from *Aloe vera* is obtained by cutting open the leaf and extracting the gel substance. This will, however, go "off" within an hour or two of extraction unless stablised. Some 16 years ago an American pharmacist, Bill Coats, made a breakthrough by discovering a way in which the gel could be stabilised so as to make it possible to bottle it and turn it into a commercial property.

Before stablisation of the gel extract was made possible, Aloe was used as a cathartic and extraction was aimed at obtaining the drug Aloin. One simple method used was to cut the fleshy leaves off near the base and then place them in receptacles, often canvas, goatskin, or a wooden trough, with the leaf tips erect. The juice may take 4 or 5 hours to drain and is very bitter. After draining it is boiled down or air dried so that it will solidify when cooled. This hardened mass is the crude aloes of the drug trade, and contains the active constituent which is a mixture of glucosides, and when extracted is collectively called Aloin. This is a strong cathartic, and the United States imports nearly 300,000 pounds of this crude aloe in order to extract the required amount of Aloin. It is one of the constituents of several well know laxative preparations.

To-day *Aloe vera* fans claim that it can be used for a variety of medecinal purposes, including the prevention of baldness, a cure for headaches, a deodorant and for blood infections.

It is easy to grow as long as it is planted in a well drained soil and not overwatered.

This interesting plant is a useful addition to the herb garden.

Reproduced by permission from 'The Herb Age', the Newsletter of the Herb Society of Victoria, No 30, February 1983).

EDITOR'S NOTE: It is interesting to note that the United States Food and Drug Administration has taken the unusual step of approving the use of *Aloe vera* as a curative, declaring the gelatinous juice of its leaves to be an effective healer of minor skin irritations and cuts. Russian scientists have gone further and claim that it is the best cure for radiation burns so far discovered!

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Marilyn O'Dowd is an expert on the medicinal uses of herbs, so not surprisingly you will find a great many of this type of plant in her nursery, some with intriguing old-world names like Pleurisy Root, Rupturewort, Scurvy Grass, and Sleep Berries.

Here, too you will find old-fashioned and hard to find perennials, like the white Bugle *(Ajuga reptans alba)*, Chinese Forget-me-not *(Cynoglossum amabile)*, *Viola macedonia*, the Woolly, Black and Moth Mulleins, variegated Myrtle *(Myrtus communis variegata)*. There are many scented-leaved geraniums, honeysuckles and jasmines, several lavenders and a good range of violets, as well as all the culinary herbs, and a few vegetables like globe artichokes, asparagus and celeriac. Mrs O'Dowd also stocks a number of trees, both native and exotic.

The nursery is open from Monday to Saturday from 10.00 a.m. to 4.00 p.m. and orders can be despatched bare-rooted and packed in moss, by rail, road or by post. Send 60c plus a stamped address envelope for a complete list of plants available - Woodside Herbs, 100C Georges River Road, Kentlyn via Campbelltown, N.S.W. 2560. Tel: (046) 25 3086.

Plant Craft Cottage, Royal Botanic Gardens, Melbourne

The Dye Group

Once a gardeners residence, the Plant Craft Cottage in the Royal Botanic Gardens is now a bustling centre for plant crafts. Diverse groups devoted to plant crafts are flourishing, one such group is the Dye group.

The aim of the Dye Group is to gather together both beginners and experienced dyers from throughout Victoria, and to have links with dyers around Australia.

The Dye Group contributes to the Von Mueller resource centre in the Cottage by gathering information and samples in the following areas:

1. Eucalyptus leaves and bark. Colours obtained on wool samples are filed in the resource centre for general use, and special samples together with botanical specimens are filed in a map cabinet for reference.
2. The Gerber investigative method. This method gives 16 different samples from each experiment. Wool samples from these experiments are filed for use by the public.
3. The Colour Wheel Study Group. The aim of this group is to make a thorough study of colours obtained from natural dyes. Results will be published, and a colour wheel made for permanent display in the Cottage. Wool samples showing progress results are on file in the resource centre.
4. The results of public workshops are also on file.
5. Displays are mounted in the Cottage 3 or 4 times per year. 1982 displays included eucalyptus dyeing, lichen dyeing, and at present visitors can admire a beautiful colour wheel with labels of plants used.
6. The most important area of study is to establish colours which are lightfast, and the group is working on this problem. Results will be available early in 1983.
7. The group has published the following papers: Gerber Investigative Method, Practical Guidelines compiled by John Noble, Information on Moidants, The Plant Craft Cottage Dye Group Method of Lightfastness Testing.

Voluntary Guides

The Voluntary Guides conduct week-day tours of the Gardens. Booking forms are available from the Plant Craft Cottage, or from the Royal Botanic Gardens and National Herbarium, Birdwood Avenue, South Yarra, 3141. Telephone (03) 63-7030.

The Vountary Guides are also available every Thursday at 11 a.m. at the Plant Craft Cottage, H Gate, Alexandra Avenue. Telephone 63-3235.

The Voluntary Guides have prepared a Year of the Tree Walk amongst the fascinating native trees of the Gardens. As well as a variety of seasonal walks, they also have a Von Mueller Walk.

> If you try to include in your scheme all the things you like and all the plants that your friends offer, together with things that they assure you "you simply must have", the result will be an unrelated jumble; it will be a sort of cocktail party of flowers all shouting and chattering into each other's ears and leaving in the beholder's mind a bewildered impression of brightness, but no abiding sense of beauty or related form.
>
> Professor E.G. Waterhouse

Vita Sackville West - 'The Garden'

The gardens at Sissinghurst Castle are so well known that they have become something of a legend in our time. Although they were the joint creation of a husband and wife team,, Harold Nicholson and Vita Sackville West - he planned, she planted - it is, perhaps, with Vita that they have become the more closely associated.

Even so, not everyone will realise that, writing in the dark days of the Second World War, when she saw her garden as a refuge in a world on the brink of disintegration, she immortalised Sissinghurst in a long poem of some four thousand lines, called, quite simply, 'The Garden'.

In it she attempts to relate the humdrum jobs of weeding, mowing, and digging to the sphere of artistic creation. The poem consists of a short introduction and four sections, of unequal length, each one devoted to a season.

In Winter she describes how 'frozen cobwebs hang on frozen thorn' while *Crocus tomasinianus* looks like 'lavender cups of tiny crockery' and Aconites like 'Dog Toby in his ruff'. Spring is the season of hope - 'I will believe in April while I live' and now the yellow Crocus shows 'her light as pointed as a candle flame' and the Lady Tulip her 'streaks of pink that ribs the white'. In Summer dog roses 'flinging free, whip-lashes in the hedgerow, starred with pale shell blossoms' and water lilies 'stain the lake with cups of yellow, chalices of cream, set in the saucer leaves of olive green'. In Autumn comes 'the little frightened cyclamen, with leveret ears laid back' while the trees 'make sudden fires with sudden crests of flame".

The yew hedges of Sissinghurst, 'that aristocrat of hedges' are described as 'Tortured to such conceit, as chessmen,, dragons . . . obelisks most neat, pyramids mocking Egypt, cannon balls, for ever static on their verdants walls'.

There are visitors, too, to the garden, pigeons 'wheeling white' against an approaching storm, a lark killed by a bomb near its nest that 'should have died singing as it lived', and moles with 'pink palms, strong snouts and velvet energy'.

Sitting in this refuge that was her garden, she was moved to reflect 'Not for the broken innocent hearts - this war will be over soon, but only for the dead', and:

"The Morning Glory climbs towards the Sun,
As we by Nature sadly borne to strive
And our unending race to search to run,
For ever started, never to be won
- and might be disappointed to arrive".

Encouraging basal breaks in roses

A new technique to increase basal breaks (new canes from the base) in roses is described in the American Rose Magazine. Gibberallic acid is applied, using either one tablet to a mixture of ½ pint rubbing alcohol plus ½ pint of water, or 4 tablespoonsful of liquid gibberellic acid (potassium salt) to 6 tablespoonsful each of rubbing alcohol and water. The solution is applied with a small brush to the base of the bush and the bottom 6 to 8 inches of each cane after the first bloom cycle. Spinkling a handful of nitrate of ammonia around the bush a week beforehand is also recommended, since nitrogen enhances the action of the giberellic acid.

Plant Variety Rights

What does it mean?

Plant Variety Rights (PVR for short) is a system of plant patent in which plant breeders obtain exclusive rights to the commercial development of new varieties which they introduce.

Legislation along these lines is already in force in the E.E.C. and the U.S.A. and in other developed countries. Seedsmen and nurserymen have been pressing for some years for PVR in Australia; they argue that without it overseas breeders will not release their material to the Australian market, if by doing so they lose control of their investment - and modern plant breeding is a complex, long-term and highly labour and capital intensive operation.

Draft PVR legislation has been before the Federal Parliament for some time. Not surprisingly it has it opponents; some fear a 'take-over' of our seed industry by multi-national chemical companies; the Australian Council of Churches thinks it will lead to the exploitation of third world farmers through our use of their wild species in breeding improved new varieties; it is opposed by most conservation and environmentalist groups.

We publish below the views of one nurseryman, because they appear to be fair and reasonable. This has been condensed from a rather longer article which appeared in the November 1982 edition of 'The Herb Age', the Newsletter of the Herb Society of Victoria, and we wish to thank both the author and the editor of 'The Herb Age' for their permission for this to be reproduced.

Plant Variety Rights

by Don Leigh, Herb Patch Nursery, The Patch, Victoria

I am a nurseryman and I received a steady supply of propaganda from both sides of the PVR argument. By the time that the serious deficiencies of the 1979 draft Bill were being discussed in public it had become apparant that the previous low-key approach of the pro-PVR group was changing to a high-pressure big money promotion. Funded by Shell Oil (now the world's largest plant breeder) and Continental Grains Corporation, the high-priced lobbyists sailed into action in Canberra. While this expensive attack was proceeding, the free lunch brigade was hard at work on the feature writers for the agricultural and horticultural press. As a result a virtual flood of articles appeared during late 1980 extrolling the virtues of PVR and heaping scorn on those who doubted the high ideals of its promoters.

Reaction to this display of big money power was predictable. The Australian public reasoned that large companies do not spend that sort of money just to benefit plant breeding, the farmer or the consumer - money of this magnitude is only spent as an investment or, as in this case, to create a larger market. So the public backed the underdogs - the Plant Diversity Protection Committee, the Food Justice Centre, the National Seeds Action Coalition, etc. There were more letters written to Members of Parliament requesting abandonment of PVR legislation than on any other contentious legislation in Canberra's history.

This upsurge of interest and resistance to PVR followed highly publicised changes which were made to the laws covering the sale of seeds in the E.E.C., and it is interesting to follow the public reaction to the introduction of PVR in Europe (or PBR as it is called there).

England passed their Plant Varieties and Seeds Act in 1964. In other countries the date was a little earlier and the International Union for the Protection of New Plant Varieties (UPOV) was founded in Europe in 1961.

UPOV is one of those semi-official organizations beloved by Europeans. It is based in Geneva along with several other similar organizations who like to claim close ties with the United Nations. When first formed its main purpose was to co-ordinate the plant patenting system being investigated by the E.E.C. members (UPOV does not like the word 'patent' and prefers to use their coined phrase 'plant breeders rights) and it issued criteria to its member countries for this purpose.

Over the years UPOV's membership and raison d'etre have changed considerably. Although membership is still on a State basis the main membership pressure is through the large seed companies in those countries (because there are now very few small seed companies) and consequently UPOV's considerable influence is now on marketing and the development of marketing strategies for patented seeds throughout the world.

The reason given for the introduction of patenting laws by the Europeans were virtually the same as those which have been put forward in this country, and although the well publicised take-overs of small seed companies by the mighty Shell, Ciba-Geigy and other large chemical companies did certainly occur, the impact of PBR hardly caused a ripple. Even the introduction of the Seeds (National List of Varieties) Regulations in 973 did not create much concern.

This legislation made it an offence, subject to certain exceptions, to offer for sale seed of a plant variety unless the name of that variety was included in the U.K. National List or the E.E.C. Common Catalogue of Vegetable Varieties. The principle exceptions referred to the export of seeds outside the E.E.C. area and for tests and trials. Those promoting this regulation on the sale of unpatented seeds contended that the legislation was necessary to protect plant breeders from having new varieties poached by rivals and sold under another name. There seemed no reason to believe that this was not a fair reason for the introduction of the law, and although the 'list' did prohibit the sale of some traditional varieties of seeds the impact of this was hardly felt by the seed buyers and users. The range of available seeds was still vast and most requirements for seed performance could be met.

So everything went along quite happily while the large chemical companies digested their new seed company acquisitions and organized their seed marketing divisions. However it did not take them long to realise that the range of varieties available on this 'Common Catalogue' made the marketing of their patented seeds an extremely difficult and expensive business.

A quick solution was needed and it came from their 'club', UPOV, who pressured its member governments in the E.E.C. to make drastic reductions in the competing varieties; as an example, in August 1977 126 varieties were removed from the list. By 30th June 1980 all non-traditional synonyms were scheduled to be removed and on that date it became an offence to sell them, punishable by a fine of up to $800.

The time-table for this legal death-sentence on hundreds of popular vegetable varieties was unfortunate for the pro-PBR lobbies as at this time both Canada and Australia were preparing to introduce PBR-type legislation, and also the U.S.A. was attempting to pass an amendment to their 1970 Plant Variety

Protection Act to bring in a national list, which would restrict the sale of unpatented seeds.

Is it any wonder that there was a sudden upsurge of public interest in these countries? The most significant fact that has not been aired in public is the close association between PVR (or PBR) and some form of restricted plant list. The local agents of UPOV strenuously deny that there is any intention to tack a restricted list on to the Australian PVR scheme at some later date. Quite frankly I do not believe this. The UPOV timetable is almost predictable. To prove my point let us look at the situation in U.S.A. America brought in the plant patenting amendment to the U.S. Patent Law on 23rd May 1930. It was a good law and coverd all asexually reproduced plants other than tuber-propagated plants or those found in an uncultivated state. It was a law designed to promote an improvement in plant performance and it gave no protection to the patent holder outside the U.S.

This form of plant patenting law was of no use to UPOV because no one could build an international marketing empire using asexually produced plants. So America was pressured to enact the 1970 Plant Variety Protection Act and its equally important 1980 amendment. Thus we have a repeat of the E.E.C. scene on almost the same timetable - approximately ten years between a so-called Plant Varieties Protection Act and the introduction of a National Restricted Plants List. On this timetable the local agents of UPOV should be pushing to have the Australian Restricted Plants List introduced about mid 1990.

If the PVR legislation is passed by Parliament many people will be watching the Australian private and public plant breeding industry to see if there is any increase in activity. Personally I think the only change will be a decrease in both areas, but I may be wrong if the following steps are taken:

1. Loose drafting of some sections of the Act is reviewed.
2. Extension of PVR to plants other than ornamental and horticultural is vigorously opposed.
3. Australia must not join UPOV.
4. All possible action is taken to ensure that Australia never issues any form of National List or Common Catalogue or places any other restriction on the sale and distribution of seeds.

Finally, I should point out that some governments are having second thoughts about their plant patenting legislation. Both U.S.A. and West Germany have investigations proceeding into undesirable aspects of their versions of PVR and the U.K. has recognized the dangers inherent in the loss of genetic lines in banned varieties by setting up, in association with OXFAM, an enormously expensive Vegetable Seed Bank where at least 12,000 different vegetable varieties can be stored. This seed bank was established in late 1979 at the National Vegetable Research Station at Wellesbourne. The Director of the Station, Dr John Blesdale, has described the E.E.C. Common Catalogue as a self-inflicted wound which is intended to clear the European market for patented varieties.

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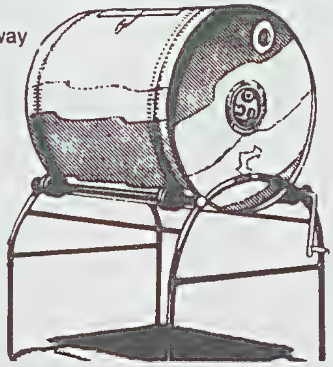

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In addition to facilitating the long term maintenance of plant vigor, the Green Sleeves packaging system provides a physical, impenetrable barrier to organisms producing plant disease.

Trade enquiries to Mr P Schampers, Greensleeves Distributors, 734 Old Northern Road, Dural, NSW, 2158. (02) 651-1588.

'Replant' Disease

'Replant disease', 'soil-sickness', 'poor growth disease' - are all terms used to describe the trouble often experienced when trees, and fruit trees especially, are planted in soil previously occupied by trees of the same species. The general visible symptons are a stunting of growth and lack of vigour, but the most important symptoms are below ground - small, dark roots and possibly a rotting of the smaller roots. These symptoms occur very soon after planting and in severe cases the tree may die very quickly. A characteristic of the disease is that it can be cured by transplanting the tree to fresh ground.

Most commonly affected are - apple, citrus, cherry, flowering cherry, peach, pear, plum, quince, and roses when budded on *R.canina* rootstock. Slightly affected are - pine, raspberry, spruce, strawberry and grapes.

Unfortunately the disease has not been well documented and very little research work has been carried out on it. With grafted or budded plants susceptibility seems to vary with the rootstock used. Roses on *R.canina* rootstock (now largely superseded) are particularly susceptible, while plums on *P.domestica* or *P.cerasifera* are little affected - cherries (both edible and ornamental) on *P.avium* are very susceptible.

At one time it was thought that the problem occured only when like species followed like, e.g. apples following apples, cherries following cherries, but it has now been suggested that the disease may be more widespread in that, in the case of apples at least, quite unrelated species of fruit, and even vegetables following may be affected.

In most cases the disease appears to be due to a microbial agent in the soil, but the causes may be different for different plant species. Certain species of eelworms have been suspected, as have various soil-borne fungi.

Whatever the cause, the trouble can be prevented by changing or sterilizing the soil. To change the soil when planting on the site of a previous tree or shrub the following procedure is recommended - dig a planting hole a few centimetres wider than the full spread of the roots, say at least 60cm, and at least 45cm deep. This hole is then filled with fresh soil.

If the disease is already apparant, and provided that there are no indications that a virus is responsible, a permanent cure can be affected by lifting the plant, shaking off all surplus soil and transferring it to a fresh site.

If it is necessary to sterilize the soil before replanting, for example in a large area like a rose or strawberry bed where it is impractical to change all the soil, the latest recommendation is to prepare a concentrated formalin solution (1 in 10 dilution of 38-40% commercial formaldehyde) and applying it to freshly raked soil at the rate of one litre of the solution in 4.5 litres of water over one square metre. Next day flood the treated area with water at the rate of about 23 litres of water to the square metre. Then cover the soil with damp sacking or polythene to contain the vapour for 24 hours. After removing the covering leave for at least three weeks - or six weeks in the case of a heavy soil - turning over with a fork at intervals in the meantime. The area can then be replanted.

G.W.F. Sewell: Review of Plant Pathology, Vol. 58

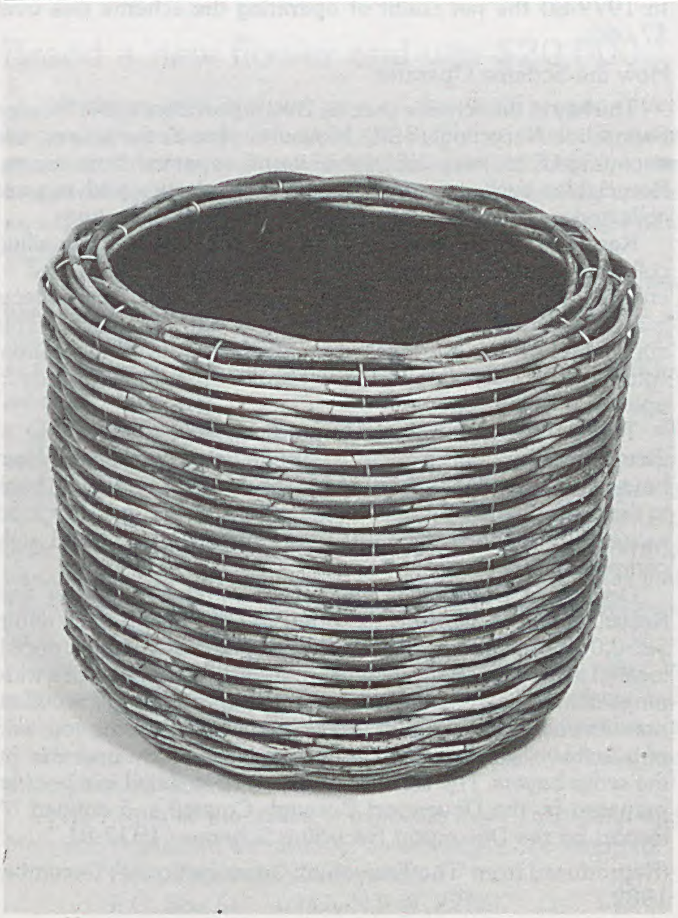
The Royal Water Lily

The giant royal water lily, *Victoria amazonica,* was discovered in South America in 1801. It was first named *Victoria reqina,* in honour of Queen Victoria, but its specific name was later changed to *amazonica.* It was introduced into England in 1849, and flowered the same year in the conservatory at Chatsworth. It is now a feature of many Botanic Gardens the world over.

The following brief notes refer to its growth in its natural habitat, which is restricted to the 'white water' lakes of the Amazon basin. 'White water' is a term used to describe the rich muddy suspension of minerals and salts that is brought down from the Andes, and which is quite different to the 'black water' which originates in the sterile plateaux to the north and south.

The optimum water depth appears to be between 50 and 150cm. The crown, immature flower buds and the 'fist' of unopened leaves develop under water, the temperature of which will vary from 25 up to a little over 28 degrees Celsius - seed will not germinate at lower temperatures.

Flower buds that are clear of the water begin to open at sunset, apparently triggered by lowering light intensities. Within two hours the flowers will be fully open, emitting a strong scent of pineapples, which attracts the natural pollinators, four species of Dynastia beetles. From midnight the scent weakens, and the inner petals turn slowly to purple. By mid-morning the next day the flowers will be closed; by midday the petals will be purplish-red, and late that afternoon they will open for the last time. On the morning of the third day the flowers sink beneath the surface to decompose gradually and allow the seeds, which are the size of peas, to mature and then float to the surface to be dispersed by the currents.



Bagasse

Bagasse is a residue from sugar-cane processing. It is clean, non-packing and long lasting.

Now bagasse is being made into a potting soil in the U.S.A. The American Rose Magazine states that 'Bagasse Potting Soil' made of shredded and composted bagasse, is a soft, fluffy material containing minor amounts of nutrients but with water-holding capacity seven times its own weight. It has a pH of 6.3.

Roses planted in pure bagasse potting soil were said to be much superior, with exceptionally large blooms, to those planted in a 1:1 peat and pine bark mix. A mix of half pine bark and half bagasse gave almost equally good results. Another rosarian who used bagasse in equal proportions with compost and clay loam soil on his garden beds reported outstanding growth.

New Flowers and Vegetables in the U.S.A.

The W.Atlee Burpee Co. are now offering 'Pot n' Patio', the first shortday aster for flowering indoors in winter as well as for summer bedding or container planting. Another Burpee exclusive is a semi-dwarf (1 metre) hollyhock called 'Pinafore'.

The Geo W. Park Seed Co. is offering 'Sweet Sue', a New Guinea impatiens with 5cm orange flowers. Another impatiens now on the American market is 'Showstopper', a pink self-branching variety suitable for hanging baskets.

The Burpee Co. has also introduced 'Green Bouquet',a bush basil with a neat rounded habit, said to be suitable for edging or hedging.

Cane - A natural addition

Cane was first used in English furniture about the time of the restoration and was favoured by furniture makers during the period of Charles 2nd, William and Mary and Queen Anne. It also had a revolution during the Chinese era in the late 18th century and also in the classic work of the Adams Bros.

Louis XV and XVI also made use of the cane but it was not till the classic Victorian era that canework reached the zenith of its popularity.

It has taken approximately 75 years for the revolution to start all over again. We now see cane used tastefully in modern funiture but it is only within the last 18 months that a successful product has been made which is aimed directly at the horticulturalist.

An interesting range of high - quality lined cane planters is now being manufactured by Judith Bingley Pullin at her Cane Garden in Melbourne suburb of Camberwell.

Cane is tightly woven around a moulded plastic insert which is completely waterproof and extremely durable. The cane is rolled around the top of the insert, which when complete with plant and growing pot is invisible.

Contrary to what one might think the price is only a fraction of its unnatural competitor - fibreglass; morever the cane used is top quality and they are all made to order in Australia.

The baskets, whether they are natural or lacquered, come in three sizes ranging from the smallest of 12 inches internal aperture, up to an opening of 17 inches.

The baskets themselves are a feature and greatly enhance their surroundings as is evidenced in a number of large buildings in Melbourne.

garden market place

NURSERIES - GENERAL

SWANE'S NURSERY, 490 Galston Road, Dural, N.S.W. 2158. Tel: (02) 651-1322 — Where nature tends to grow on you! - Suppliers of quality trees, shrubs, roses, fruit trees, seedlings, indoor plants and a comprehensive range of chemicals and fertilizers to home gardeners. Qualified advisory staff on duty 7 days a week from 9 a.m. to 5 p.m. - Ample parking, light refreshments and beautiful gardens make this a delightful nursery to visit.

WIRREANDA NURSERY, 169 Wirreanda Road, Ingleside, N.S.W. 2101. Tel: (02) 450-1400 — Top quality, super value trees and shrubs, ferns and indoor plants direct from the grower. Stunning assortment of Australian natives and exotics to choose from, incuding many species rare and unusual. Turn off Mona Vale Road at Tumburra Street, Ingleside and follow signs to Nursery. Open 7 days.

NURSERIES - SPECIALIST

THE LAVENDER PATCH (M & F French), Cullens Road, Kincumber, N.S.W. 2250. Tel: (043) 69-1611 — The Lavender Patch Farm and Nursery specialists in Lavender plants of all kinds - from the 'stillroom' quality dried Lavender and potpourri supplies. Open Saturday, Sunday and Monday only.

NURSERIES - NATIVE PLANTS

ZODIAC NURSERY, P.O. Box 210, Tolga, North Queensland, 4882. — Rainforest plants wide range of species - Many never before offered. Trees, shrubs, and creepers mostly in 50mm tubes grown on the Atherton Tableland, so are quite hardy. Most will survive at least to coastal southern N.S.W. - Minimum order one carton.

SEEDSMEN

BUSHLAND FLORA, Box 118, Scarborough, W.A. 6019. Tel: (09) 446-3446 — W.A. wildflower seeds; rare and selected species - Banksias, Kangaroo Paws, Hakeas, Waxflowers, Feather Flowers, Eucalypts, Melaleucas, Bottlebrushes, Everlastings, Sturt Peas, Starflowers, Boronias, Leschenaultias, and many more. Send S.A.E. for descriptive list of 200 species.

BOOKS ETC.

GATTON PLAZA NEWSAGENCY & BOOKSHOP, Gatton Plaza Shopping Centre, Gatton, Queensland, 4343. — Publications on native plants, wildflowers - Largest selection available. Send a 35c stamp.

TOOLS AND EQUIPMENT

W.JNO BAKER (HOLDINGS) PTY. LTD. 3rd Floor, Dymock's Building, 428 George Street, Sydney, N.S.W. 2000. Tel: (02) 233-2331 — Wholesale and retail - wide range of top quality 'Kunde' (German) garden tools.

A recycling scheme for Tasmanian Municipal Councils.

Today, councils all over the world are experiencing a common problem - knowing how to satisfactorily dispose of enormous quantities of domestic refuse. The method used by most councils to overcome this problem is that of dumping into sanitary landfill sites. Whereas this may be the most convenient method of refuse disposal for most councils it has one major drawback. With the vast quantities of domestic refuse being generated every day by our consumer society, the sites suitable for sanitary landfill are becoming scarcer and more distant from the communities they serve.

If councils only knew of alternative, practical, economic, and basically simple method of waste disposal that would reduce the need for new landfill areas, lengthen the life of existing tip sites and at the same time utilise the latent resources that exist in the refuse, then it is reasonably certain that they would opt for such a scheme with little hesitation.

There is just such a scheme in existence at the present time. It has in fact been in existence since 1977 in the Devonport Bourough Council of Auckland, New Zealand, and what is more, it has been operating successfully and continuously over that period.

The Devonport Borough Council has 4000 householders, which is comparable in size to most medium sized municipalities in Tasmania. This council has developed a recycling scheme that could become a model for adoption in Tasmania. It requires no great capital outlay or the running costs of any mechanical operation such as compaction equipment. In addition, by running the scheme the council also gains some revenue from the sale of recyclable materials. Devonport Borough has found the scheme to provide a growing financial benefit to the council. In 1979-80 the net credit of operating the scheme was over $7,000.

How the Scheme Operates

The key to the scheme used by Devonport Borough is 'Source Separation Recycling' (SSR). Householders, as the source, are encouraged to keep recyclable items separate from waste. Recyclables such as cans, glass, paper, plastics and rag are collected regularly in conjuction with garbage collections.

Residents are provided with an attractive calendar detailing collection dates. As an incentive to reduce garbage (and to encourage involvement in the scheme) the Council only collects garbage placed in bags it sells (at about 50c each). This application of the 'user pays' principle has reduced the annual volume of garbage to about two thirds of the amount prior to operation of the scheme.

The Council sells recyclables to firms able to make use of them. It also operates a compost system using putrescibles from household trailer loads delivered to the tip. Compost is sold back to the public. To encourage householders to compost their food wastes, the Council distributes information leaflets and sells compost bins.

Devonport Borough is developing a 'refuse Transfer and Recycling Depot' which is expected to save the Council about $250,000 per annum in refuse handling costs. At this depot, located at the tip entrance, there are collection facilities for a wide range of materials including cans, steel, paper, glass, glass cullett, non-ferrous metals, cloth, firewood, plastics, sump oil and putrescibles. Some of these collection facilities are operated by the scrap buyers. The scheme is described in detail in a booklet prepared by the Devonport Borough Council and entitled "A Report on the Devonport Recycling Scheme - 1977-81."

(Reproduced from 'The Tasmanian Conservationist', December 1982.)

PLANTS LOVE IT...

Replace pot plant soil with Aquaponics expanded clay pebbles. Replace traditional fertilizers with Aquaponics controlled nutrient solution.

And watch your plants grow quicker, healthier and more beautiful. You pay a lot for your plants. Pay a little extra to keep them. Aquaponics pot plant kits are available at most nurseries. For information about your nearest retailer call

R & D AQUAPONICS

1 Park Road, Rydalmere. Phone 638 2601

BRD53

Breed a new flower and win $20,000

Thompson and Morgan, one of the world's major seed houses, whose seeds are widely available in Australia, have announced that they will pay £Stg 12000 (about $20,000) to the first amateur gardener who finds, grows, or successfully breeds an improved flower or vegetable that is featured as a major new variety by them.

They point out that all one needs to be able to breed a new variety is a backyard, a great deal of patience, good powers of observation, and the ability to know what to aim for. Quite a few of the plants in their current catalogue have, in fact, come from amateur breeders.

Thompson and Morgan believe that this competition will encourage home gardeners to develop a hobby within a hobby, and produced a free illustrated leaflet, introducing the beginner to "Plant breeding". This leaflet describes the two basic methods, selection and cross pollination, and gives advice on isolation and harvesting. It also includes a list of flowers and vegetables that Thompson and Morgan feel are easy to improve, plus a reference book source list for further study.

The competition will remain open for at least four years. In addition to the prize any other plants that Thompson and Morgan decide to include in their range of seeds will receive a guaranteed royalty of between 2c and 4c per packet for the first three years of worldwide sales.

A free copy of the leaflet is available from Thompson and Morgan's Australian distributors, by sending a 27c stamp to:

Erica Vale Australia Pty. Ltd.
P.O. Box 50, Jannali, N.S.W. 2226

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Eighth page:	6cm x 9cm	- $ 40.00
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